

**PROPERTY VALUE DIMINUTION DUE TO CONTAMINATION EMANATING FROM THE
HERCULES MANUFACTURING SITE IN HATTIESBURG, MISSISSIPPI**

Expert Report

BY:

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1. Introduction

In this report I present predicted diminution in property values due to contamination from the Hercules manufacturing site in Hattiesburg, Mississippi. Testing of dust collected in attics of properties in Hattiesburg identified Dioxathion and/or Toxaphene in buildings up to 2.5 miles from the Hercules plant (Horsak, 2015).

In this report I use results from studies confirming that contamination reduces the value of properties as measured by reduced sale prices. I use this information, based on actual sale prices of properties, to estimate the diminution in value of single-family residential and commercial (industrial, multi-family, office and retail) properties in Hattiesburg, Mississippi.

The economics literature contains numerous studies that demonstrate that contamination reduces property values (Boyle and Kiel, 2001; Braden, Feng and Won, 2011; Jackson, 2001; Simons and Saginor, 2006; Sirmans et al., 2006). In this report I use an equation estimated by Simons and Saginor (2006) to predict the diminution in property values of single-family residential properties within 2.5 miles of the closed Hercules manufacturing facility. To predict commercial property value diminutions I use a result from an equation estimated by Ihlanfeldt and Taylor (2004). These steps will be explained in further detail below.

In the following I present a summary of my opinion, a description of my qualifications, background on the contamination, a description of the method used to compute property-value losses, and then the computation of the predicted diminutions in property values. My opinions are based on methods and materials reasonably relied upon in the economics

valuation of real estate property, and my opinions are stated to a reasonable degree of economic certainty.

2. Summary of Opinion – Best Estimates of Property Value Losses

I provide two predictions of the diminution of property values in Hattiesburg, Mississippi emanating from the closed Hercules manufacturing facility, one for single-family residential properties and the other for commercial properties (industrial, multi-family, office and retail).

- The best prediction of the diminution in value of single-family residential properties is 15.4%. This property-value diminution applies to developed lots with residences and undeveloped lots in areas with single-family residences.
- The best prediction of the diminution in value of commercial properties is 10.0%. This property-value diminution applies to developed lots with buildings and undeveloped lots in areas with industrial, multi-family, office and retail properties.

These predictions of property price diminutions are appropriate to compute the anticipated loss in property tax revenue to the City of Hattiesburg from diminished sale prices of properties due to contamination from the Hercules manufacturing site. The predictions of price diminutions are based on studies of actual sale prices of properties affected by contamination. Thus, in the presence of contamination, these percentages can be used to predict what assessed values would be but for the contamination.

The single-family residential price diminution of 15.4% would be appropriate to apply to the Hattiesburg Class 1 (residential owner occupied/homestead exemption allowed).¹ The commercial price diminution would be appropriate to apply to Class 2 (all other property - commercial, rental, agriculture, recreation, etc.). These applications of the price diminutions to the Class I and Class II properties will likely underestimate property tax losses to Hattiesburg. For example, to the extent that single-family rental homes are classified as Class II properties, the percentage price diminutions will be understated.

¹ Source of Class I and Class II property definitions: Annette Herrin.

3. Professional Qualifications

I am Director of the Virginia Tech Program in Real Estate and a Professor in the Department of Agricultural and Applied Economics at Virginia Tech. Prior to my current position, I was the Head of the Department of Agricultural and Applied Economics at Virginia Tech, and previously Distinguished Maine Professor at the University of Maine. The title of *Distinguished Maine Professor* is awarded to less than five percent of the faculty and is the highest faculty honor at the University of Maine.

I received my B.A. in Economics with Distinction from the University of Maine, and M.S. in Agricultural and Resource Economics from Oregon State University where I received the Savery Masters Student of Excellence award. I received a Ph.D. in Agricultural Economics from the University of Wisconsin.

My research focuses on the validity and reliability of methods used to calculate values for environmental goods and services, such as changes in the quality of property value due to contamination. A specific area of expertise is the estimation of property-value models using actual sale prices to identify how property attributes, such as contamination, affect property values. I have 30 years of experience with the application of economic methods to value natural resources. I am a co-editor of *A Primer on Nonmarket Valuation* (Champ, Boyle and Brown, 2003), which provides an introduction to the major methods for valuing natural resources, both amenities and disamenities, and includes a chapter on how to estimate reliable property-value models.

I have conducted extensive work on estimation of property value models and the applications include:

- measuring the impact of lake water quality on lakefront property values in Maine (Michael, Boyle and Bouchard, 2000),
- measuring the impact of building structural characteristics on property values (Boyle and Taylor, 2001),
- measuring the impact of lake water quality on lakefront property values in New Hampshire (Gibbs et al., 2002),
- measuring the visual impact of commercial development on residential property values in Connecticut (Paterson and Boyle, 2002),

- measuring the impact of a national wildlife refuge on property values in Massachusetts (Neumann, Boyle and Bell, 2009),
- measuring the impact of arsenic contamination in groundwater in Maine (Boyle et al., 2010),
- measuring the impact of invasive aquatic plant (Eurasian milfoil) on property values in Vermont (Zhang and Boyle, 2010),
- measuring the impact of stormwater infrastructure on property values in Virginia (Boatwright et al., 2013),
- measuring the impact of the hemlock wooly adelgid infestation on property values in southern New England (Li et al., 2014), and
- measuring the impact of the mountain pine beetle infestation on property values in Colorado (Cohen et al., 2015).

My research has found that negative environmental characteristics, including contamination, can result in substantial reductions in sale prices of properties.

I will use the Simons and Saginor (2006) property-value model to predict the diminution in property values of single-family homes. The Simons and Saginor model is what is known as a meta-analysis. This is another area of economics where I have extensive experience. I have conducted meta-analyses of the following types of economic valuation studies:

- property value impacts of tree-canopy cover in residential neighborhoods (Siriwardena et al., 2015),
- values for recreational fishing (Boyle et al., 2013), and
- values for groundwater protection (Boyle, Poe and Bergstrom, 1994).

The book, *A Primer on Nonmarket Valuation* (Champ, Boyle and Brown, 2003), also includes a chapter on the conduct of reliable meta-analyses.

I am active in consulting on the monetization of injuries due to environmental contamination. The first case I worked on was the Eagle Mine Natural Resource Damage case in Colorado in the 1980s. Examples of other cases for which I have provided expert support include the *Exxon Valdez* oil spill in Alaska, the *American Trader* oil spill in California, the Passaic River damage assessment in New Jersey, illegal tree harvesting on the shores of a wilderness

area in Vermont, Tutu groundwater contamination on St. Thomas, U.S. Virgin Islands, Kingshill aquifer contamination on St. Croix, U.S. Virgin Islands, groundwater contamination by MTBE in Pascoag, Rhode Island, and surface water contamination from poultry litter in Oklahoma. My role in these cases has included serving as an expert advisor, peer reviewer, and expert witness. I have worked for responsible parties, natural resource trustees, private attorneys, and as an independent expert in collaborative injury assessments.

I formerly chaired the *Council on Food, Agriculture and Resource's* "Blue Ribbon Panel - Natural Resources and Environmental Issues" that supports decision-making on national and state environmental and natural resources issues. I am a founder of the *American Agricultural Economics Association's* "Land, Water and Environment Section" that enhances teaching, research and service on these topics. I previously served as a member of the U.S. EPA *Science Advisory Board Advisory Council on Clean Air Compliance*. I currently serve on the *Environmental Economic Advisory Committee* of U.S. EPA's *Science Advisory Board*.

4. Contamination

Testing of dust collected in attics of properties in Hattiesburg identified Dioxathion and Toxaphene, both contaminants associated with the Hercules plant, in buildings up to 2.5 miles from the Hercules plant site (Horsak, 2015). Figure 1 shows the locations of properties where these contaminations were (red dot) and were not (white dots) found in attic dust samples. Horsak also states there is contaminated surface soil that "is redistributed throughout the community by wind events and other events".

Figure 1. Map of Attic Dust Sampling, Hattiesburg, Mississippi



5. Approach to Computing Diminution in Property Values

The approach used to predict the diminutions in property values is based on sale prices of properties that have been affected by contamination. To do this, economists collect data on sale prices and other characteristics of properties that have and have not been affected by contamination in a specific market. These data are used to estimate a property-value model that provides a measure of the diminution in sale prices (property values) due to the contamination. Property-value models are commonly referred to as “hedonic” models in the economics literature (Taylor, 2003). These are referred to as hedonic models because they are based on sale prices between willing sellers and willing buyers each acting in their own best interests to arrive at a fair market sale price or value.

Such a model has not been estimated for Hattiesburg, MS because the contamination referenced above has only been known for the last few months and the market has not had a chance to adjust to this contamination information, i.e., buyers and sellers would not be agreeing to transactions with full information on the extent of current contamination and the potential for future contamination.

There is an established procedure that economists use to transfer changes in value from one market to predict changes in value in a market where a model has yet to be estimated. This approach is commonly referred to as a benefit transfer (Rosenberger and Loomis, 2003). There are two approaches to transfers: value transfers and equation transfers. A value transfer takes a specific value from a market that has been studied and applies it to a new market and an equation transfer uses an estimated equation from one market to predict a calibrated value for the new market. I will use an equation transfer for single family residential properties and a value transfer for commercial (industrial, multi-family, office and retail) properties. I use different approaches for each property type due to the availability of existing studies on the effects of contamination on sale prices of properties.

A common approach to conducting an equation transfer is to use a meta-analysis (Van den Bergh, 1997). Here, a meta-analysis would take the property value diminution from multiple hedonic studies and use the characteristics of the studies to explain how property value diminutions vary from study to study. It is these study-characteristic variables that allow a calibrated property value diminution to be predicted for a site that has not been previously studied.

I will explain each of these procedures in further detail below. For single-family residential properties I use meta-analysis of property value diminutions computed from hedonic models of actual property sale prices (Simons and Saginor, 2006). For commercial properties I use an estimate of the property value diminution for commercial properties from a hedonic model of actual commercial property sale prices (Ihlanfeldt and Taylor, 2004).

5.1 Hedonic Property Value Models

Hedonic models use established statistical procedures to estimate the relationships between sale prices of properties and characteristics of properties (Taylor, 2003; Reichert, 1997; Sirmans et al., 2006). Properties are multi-attribute goods whose values are functions of property characteristics such as:

- land features (e.g., acreage, location in a flood plain, and other physical characteristics);
- community features (e.g., zoning, school quality, and other locational characteristics);

- elements of structures on the property (e.g., square feet of built area, age of structure, and other structural characteristics); and
- proximity to amenities and disamenities (e.g., open space or pollution, respectively, and other environmental characteristics).

Contamination from the Hercules manufacturing site is an example of a disamenity that would reduce sale prices of properties.

A hedonic model can be represented by a simplified equation. As an example, consider the following:

$$sp = \beta_0 + \beta_a acres + \beta_{sq} schoolquality + \beta_{sf} squarefootage + \beta_{dp} distancepol + e$$

where

sp = sale price of a property,

$acres$ = the size of the property in acres,

$schoolquality$ = an index of the quality of primary and secondary schools in the area,

$squarefootage$ = square footage of the residence on the property,

$distancepol$ = the distance from a pollution site to the property, and

e = an error term.

Of course, properties have other characteristics that may affect sale prices, but I have included one example from each of the above categories of characteristics in this example. It is never possible to include all variables in an equation because data on all property characteristics are not available to include in the model and the effects of these omitted variables are captured in the error term (e).

Here sp is the dependent variable that is explained by the variables on the right-hand-side of the equation. In the above equation, the β s are the measures of the effects of each characteristic on sale prices. Thus, since the model is estimated using actual sale prices of properties, β_{dp} is a measure of the diminution in the sale prices (value) of properties due to pollution.

Distance from a contamination site is typically used in hedonic equations to represent the effect of pollution on sale prices of properties (e.g., Kohlhase, 1991; Reichert, 1997; Smolen, Moore and Conway, 1992). That is, sale prices can be diminished by contamination on the

property or nearby contamination that could spread to the property (Boyle and Kiel, 2001; Braden, Feng and Won, 2011; Jackson, 2001; Simons and Saginor, 2006). In both cases, the property owner experiences a real loss in the sale price of a property.

An example of contamination on a property would be the Dioxathion and Toxaphene identified in the attic dust tests conducted in Hattiesburg, MS. An example of nearby contamination is the contaminated surface soil in Hattiesburg that Horsak (2015) says could be redistributed within the community by wind and other events.

5.2 Meta-analysis

Meta-analysis is a procedure that is widely used in economics and other fields of study to statistically summarize results from multiple empirical studies (Stanley, 2001). Any single study represents site-specific characteristics, whereas multiple studies collectively present variation in site-specific characteristics that is not possible in a single study. Stanley (2001) states that *“(i)f a number of independent studies have been conducted on a particular subject, using different data sets and methods, then combining their results can furnish more insight and greater explanatory power than the mere listing of individual results”* (p. 131).

A typical meta-analysis takes observations on a variable of interest (β_{dp} from the above equation here) and estimates an equation that explains variation in this variable across studies as a function of key study characteristics. I will use the meta-equation estimated by Simons and Saginor (2006) to explain the meta-analysis tool further as this is the equation I will use to predict the diminution in sale prices (property values) of residential properties in this report (see Simons and Saginor Exhibit 3, p. 85).

The dependent variable in the meta-equation is the percentage diminution in property values (labeled DIMPERC in Table 1). That is, each observation used in the meta-analysis is an estimate of β_{dp} from a study of the effect of the contamination on sale prices of affected properties.

The variables used to explain changes in the percentage diminution in sale prices of properties that Simons and Saginor include in their meta-equation are the geographic location of each study, classifications of pollution, community characteristics, etc. (Table 1).

Table 1. Meta-equation Predicting Diminution in Sale Prices of Residential Properties
(Source: Simons and Saginor, 2006)^a

Variables	Definitions
Dependent Variable	
DIMPERC	Percent loss in sale prices of properties
Independent Variables	
Constant	Residual effect after all variables defined below are accounted for
Real 2003\$ value	Average sale price in 2003 dollars for each study
Northeast	=1 if study conducted in the Northeast region, 0 otherwise
Industrial Midwest	=1 if study conducted in the Industrial Midwest region, 0 otherwise
South	=1 if study conducted in the South region, 0 otherwise
Farmland	=1 if study conducted in the Farmland region, 0 otherwise
Mineral Extraction	=1 if study conducted in the Mineral Extraction region, 0 otherwise
Southern Calif.	=1 if study conducted in Southern California, 0 otherwise
Northern Calif.	=1 if study conducted in the Northern California, 0 otherwise
U.S.	=1 if a national study, 0 otherwise
Sudden	=1 if contamination from a sudden event, 0 otherwise
NFA Postrem	=1 if remediation completed, 0 otherwise
Log of distance	Natural log of the average distance from border of each site
Nukemanf	=1 if nuclear facility, 0 otherwise
Superfill	=1 if hazardous waste site, 0 otherwise
Groundwater	=1 if groundwater contamination, 0 otherwise
AirCAFO	=1 if air pollution from a confined animal feeding operation (CAFO)
Urban disamenity	=1 if an urban disamenity, 0 otherwise
Litigation dummy	=1 if litigation filed, 0 otherwise
Announcement of a bad thing	=1 if public announcement of contamination, 0 otherwise
Announcement of closing	=1 if announcement of closing contamination site, 0 otherwise
Suburban	=1 if study conducted in an urban market, 0 otherwise
Rural	=1 if study conducted in a rural market, 0 otherwise
Mix	=1 if study conducted in a mixed market, 0 otherwise
2000 unemployment rate	Unemployment rate in county from the 2000 Census
30yrrt	Conventional 30-year mortgage rate
Log of sample size	Natural log of the number of impacted properties
Case	=1 if case study, 0 otherwise
Survey	=1 if survey based study, 0 otherwise
Other	=1 of other study method, 0 otherwise.

^a The variable names are directly replicated from the Simons and Saginor study. The variable definitions have been paraphrased to provide a concise presentation here.

5.3 Benefit (Value-Change) Transfer

Benefit transfer is a widely applied method that uses results from existing studies to calculate a change in value when an original study does not exist (see *Ecological Economics*, Vol. 60 (2), 2006). “Value-Change transfer” may be a more appropriate label because the procedure is used to transfer values for situations that may constitute an increase in value (benefit) or a decrease in value (loss). For the Hattiesburg, MS application we are talking about a loss associated with a diminution in sale prices of properties due to contamination.

The U.S. EPA *Guidelines for Preparing Economic Analyses* (2010) recognize benefit transfer as an accepted method of economic analysis and recommends the following “steps for conducting benefit transfer” (p. 7-45 – 7-49):

1. Develop the policy case.
2. Select study cases.
3. Transfer values.
4. Report the results.

In the current application, the “policy case” is the effect of contamination on property values in Hattiesburg, MS. Based on the statistical summary of results from multiple studies, a meta-analysis equation can be used to make customized predictions of diminutions in property values. Thus, for single-family residential properties in the current application, the study cases are 58 studies (184 observations) of property sale price diminutions Simons and Saginor (2006) used to estimate their meta-analysis. Transferring values then involves using the estimated meta-equation described Table 1 to predict the diminution in sale prices of properties for the policy case (here, Hattiesburg).

The Simons and Saginor meta-equation was estimated using data from studies of sale prices of residential properties in communities from various locations around the U.S. that experienced contamination. The meta-equation can be applied to predict property-price diminutions for such properties in Hattiesburg, MS.

For commercial properties, an estimate of the sale-price diminution from a single study will be used (Ihlanfeldt and Taylor, 2004). This is because there have been very few studies of the effects of contamination on apartments, industrial, office, and retail properties; thus, there

are insufficient data to estimate a meta-equation for the effects of contamination on these types of properties. For the Ihlanfeldt and Taylor study the study cases are the sale prices from sales of 1,229 apartment buildings, 644 industrial buildings, 260 office buildings, 816 retail buildings and 582 vacant lots in Fulton County, Georgia.

6. Computation of Sale Price Diminutions

6.1 Single-Family Residential Properties

Simons and Saginor (2006) identified 58 studies where the impacts of disamenities (negative amenities) were valued, which generated 184 observations.² Some of the studies provided more than one estimate of β_{dp} , which results in the number of observations (184) exceeding the number of studies (58). I use the equation where outlier observations have been removed from the data. The 184 observations were used to estimate the effects of each of the variables listed in Table 1 on the percent loss in property values. I use this equation, via the benefit-transfer procedure outlined above, to predict anticipated property-price (value) diminutions in Hattiesburg, MS for single-family residential properties.

To use the Simons and Saginor meta-equation to predict property-value diminutions for single-family residences in Hattiesburg I need to select the variables in the equation that will be used to calibrate a customized price diminution estimate and then assign values to these variables. The variables selected and the assigned values are:

- Constant – This represents all factors that influence property-value diminutions that are not controlled by the variables in the equation. This variable is multiplied by “1” to include it in the diminution calculation.
- Real 2003\$ value³ – This represents the market value of a property. While this variable is ostensibly relevant, the parameter estimate on this variable is so small (<0.000) that it

² There has been one more recent study (meta-analysis) of the effects of contamination on sale prices of properties (Braden, Feng and Won, 2011). I do not use this study because they used a subjective process to select the lowest price diminution from studies, which results in underestimation of the sale price diminution effect. Braden, Feng and Won (2011) also used fewer observations to estimate their meta-equation than Simons and Saginor (129 vs. 184). To make predictions with the Braden, Feng and Won meta-equation requires more subjective decisions on how variables in the equation should be coded as compared to the Simons and Saginor equation.

³ 2003 is simply the year Simons and Saginor used to bring the price diminution estimates from multiple studies over a number of years to constant dollars.

does not have an effect on the property-value diminution calculation and is not included in the calculation

- South – This identifies the region of the country where Hattiesburg is located. This variable is multiplied by “1” to include it in the diminution calculation.
- Log of distance – This variable represents the natural log of distance from the Hercules manufacturing site. Using data provided in Mr. Horsak’s (2015) affidavit, I use the mid-point (1.25 miles) of the distance from the contamination site to property most distant from the site with detected contamination dust in the attic. Properties located closer than 1.25 miles to the Hercules site may have greater property-value diminutions and properties located more distant may have smaller property-value diminution. Given the small effect of this variable in the equation, the coding of this variable does not substantially affect the diminution calculation.
- Superfill – This variable indicates the presence of a property with hazardous waste, which is the Hercules manufacturing site here. This variable is multiplied by “1” to include it in the diminution calculation.
- Litigation dummy – This variable indicates ongoing litigation related to the contamination. This variable is multiplied by “1” to include it in diminution calculation.
- Announcement of a bad thing – This variable indicates that there has been an announcement to the public that contamination is present. This variable is multiplied by “1” to include it in the diminution calculation.
- 2000 unemployment rate⁴ – This variable indicates the unemployment rate in the area where the contamination is located. I used Bureau of Labor statistics data for Hattiesburg-Laurel, MS for this variable.
- 30yrrt – This variable is the fixed mortgage rate for a 30 year loan. I used the current loan rate for Hattiesburg, MS provided by an on-line search.
- Log of sample size – This is the log of the number of residences in Hattiesburg, MS affected by contamination.

⁴ This is a common unemployment rate Simons and Saginor used for all studies in their meta-analysis; I use the current unemployment rate for Hattiesburg-Laurel, MS.

The results of the calculated property-price diminution are summarized in Table 2. The first column repeats the variable names from Table 1. The second column presents the effects of each variable on property-price diminutions as estimated by Simons and Saginor (see Exhibit 3, p. 85 in their report). The third column is the coding for relevant variables as I discussed in the bullets immediately above. The fourth column presents the calibrated predictions of property-value diminution effects for single-family residential properties in Hattiesburg; the predicted effects in the second column multiplied by the coding in the third column. The predicted property-price diminution for single-family residential properties in Hattiesburg is 15.4%, which is the sum of the effects reported in the fourth column.

Table 2. Meta-equation Predicting Diminution in Sale Prices of Residential Properties and Predicted Percentage Change in Sale Prices of Residential Properties in Hattiesburg, MS (Source: Simons and Saginor, 2006)

Estimated Meta-equation		Predicted Property Price Diminution	
Independent Variables	Coefficient Estimates (CE)	Coding	Effects (CE x Coding x 100)
Constant	-0.043	1	-4.3
Real 2003\$ value	0.000	0	0
Northeast	-0.041	0	0
Industrial Midwest	-0.087* ^a	0	0
South	-0.074*	1	-7.4
Farmland	-0.101*	0	0
Mineral Extraction	0.021	0	0
Southern Calif.	0.023	0	0
Northern Calif.	0.041	0	0
U.S.	0.007	0	0
Sudden	0.064	0	0
NFA Postrem	0.115	0	0
Log of distance	0.006*	$\{\ln(2.25/2)\}^b$	0.1
Nukemanf	-0.097*	0	0
Superfill	-0.048	1	-4.8
Groundwater	-0.085	0	0
AirCAFO	-0.091*	0	0
Urban disamenity	-0.043	0	0
Litigation dummy	-0.061*	1	-6.1
Announcement of a bad thing	0.012	1	1.2
Announcement of closing	0.128*	0	0
Suburban	0.001	0	0
Rural	-0.102*	0	0
Mix	-0.013	0	0
2000 unemployment rate	0.004	6.37 ^c	2.6
30yr rt	0.014*	4.091 ^d	5.7
Log of sample size	-0.003	$\ln(2724)^e$	-2.4
Case	-0.116*	0	0
Survey	-0.063*	0	0
Other	0.083	0	0
Predicted Diminution in Hattiesburg, MS Residential Property Prices			-15.4%

^a Indicates coefficient estimates are significant at the 10% level.^b Source: Horsak, 2015.^c Source: U.S. Bureau of Labor Statistics, Data bases, Tables & Calculations by Subject, Local Area Unemployment Statistics, Hattiesburg, MS Metropolitan Statistical Area, accessed September 24, 2015.^d Source: Yahoo Finance, Mortgage Rates: Hattiesburg-Laurel, MS, accessed September 14, 2015. Mortgage Rates Today, Hattiesburg, MS, accessed September 14, 2015.^e Source: Ms. Annette Herrin

6.2 Commercial Properties – Apartments, Industrial, Office, and Retail

Using a total of 3,531 property sales (1,229 apartment, 644 industrial, 260 office, 816 retail and 582 vacant lots), Ihlanfeldt and Taylor (2004) estimated hedonic models to compute the impact of contamination on sale prices of commercial properties in Fulton County Georgia, which contains most of Atlanta and the adjacent suburbs.⁵ Their overall estimate of diminution in sale prices for all four of these property types is 10% (see Table 4, p. 130).

7. Conclusion

In summary, the best predictions of property-value losses as a result of contamination from the Hercules manufacturing facility are:

- The best prediction of the diminution in value of single-family residential properties is 15.4%. This property-value diminution applies to developed lots with residences and undeveloped lots in areas with single-family residences.
- The best prediction of the diminution in value of commercial properties is 10.0%. This property-value diminution applies to developed lots with buildings and undeveloped lots in areas with industrial, multi-family, office and retail properties.

These measures of property price diminutions are appropriate to compute the loss in property tax revenue to the City of Hattiesburg because assessed values for property taxes are based on market prices of properties. The measures of price diminutions are based on studies of actual sale prices of properties affected by contamination. Thus, in the presence of contamination, these percentages would be used to predict what assessed values would be but for the contamination. The predictions could be used for properties beyond 2.5 miles from the Hercules manufacturing site if contamination were detected in more distant properties.

The price diminution predictions are overall predictions for properties in Hattiesburg, MS. Some, properties could have higher or lower price diminutions than the 15.4% and 10.0%

⁵ There have been relatively few studies that have considered the effects of contamination on the sale prices of commercial properties, perhaps because there is less availability of data on sale prices of these properties than there is on sale prices of residential properties (reflecting a focus on how contamination affects people in their homes). Other studies available studies were not considered here because they were distant from Hattiesburg, MS (e.g., southern California, Jackson, 2002) or the analyses were confounded by investigation of other issues (e.g., Empowerment Zones and Enterprise Zones, Longo and Alberini, 2006).

predictions. For example, properties located immediately adjacent to the Hercules manufacturing site might have much higher price diminutions.

The single-family residential price diminution of 15.4% would be appropriate to apply to the Hattiesburg Class 1 (residential owner occupied/homestead exemption allowed). The commercial price diminution would be appropriate to apply to Class 2 (all other property - commercial, rental, agriculture, recreation, etc.). These applications of the price diminutions to the Class I and Class II properties will likely underestimate property tax losses to Hattiesburg. For example, to the extent that single-family rental homes are classified as Class II properties, the percentage price diminutions will be understated.

8. Qualifications and Publications

My curriculum vita is provided in a separate document as an Appendix to this report.

9. Testimony

The following are all of the cases in which I have testified as an expert in the past four years by deposition:

- Deposition, September 2012, *Commissioner of the Department of Planning and Natural Resources, Alicia V. Barnes, et al. vs. Virgin Islands Alumina Co., et al.*, District Court of the Virgin Islands, Division of St. Croix, Civil No. 2005-0062.
- Deposition, May 2013, *New Jersey Department of Environmental Protection v. Atlantic Richfield Co., et al.*, U.S. District Court Southern District of New York, No. 08 Civ. 00312.
- Deposition, May 2013, *Mitchell McCormick et al. vs. Halliburton Energy Services, Inc.*, U.S. District Court for the Western District of Oklahoma, 5:11-cv-01272-M.
- Deposition, May 2014, *Commonwealth of Puerto Rico, et al. v. Shell Oil Co., et al.*, United States District Court for the Southern District of New York, 07-civ-10470.
- Deposition, September 2015, *Mitchell McCormick et al. vs. Halliburton Energy Services, Inc.*, U.S. District Court for the Western District of Oklahoma, 5:11-cv-01272-M.

10. Compensation

I have been paid \$300 per hour for analysis and \$600 per hour for testimony for my work in this matter.

A handwritten signature in black ink, appearing to read "Kevin J. Boyle", is positioned above a horizontal line.

Kevin J. Boyle

References

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- Sirmans, G.S., L. MacDonald, D. Macpherson and E.N. Zietz. 2006. "The Value of Housing Characteristics: A Meta-Analysis." *The Journal of Real Estate Finance and Economics*, Vol. 33 (3): 215-240.
- Siriwardena, S., K.J. Boyle, T.P. Holmes and E. Heir. "The amenity value of residential trees: A meta-analysis of hedonic property-value studies." (under review)
- Smolen, G.E., G. Moore and L. Conway. 1992. "Economic Effects of Hazardous Chemical and Proposed Radioactive Waste Landfills on Surrounding Real Estate Values." *The Journal of Real Estate Research*, Vol. 7 (3): 283-295.
- Stanley, T.D. 2001. "Wheat from Chaff: Meta-Analysis as Quantitative Literature Review." *Journal of Economic Perspectives*, Vol. 15 (3): 131-150.
- Taylor, L.O. 2003. "The Hedonic Method." Chapter 10 in *A Primer on Nonmarket Valuation*, P.A. Champ, K.J. Boyle and T.C. Brown (eds). Kluwer Academic Publishers.
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- Van den Bergh, J.C.J.M. 1997. *Meta-analysis in Environmental Economics*. Kluwer Academic Publishers, Dordrecht.
- Zhang, C., and K.J. Boyle. 2011. "The Effect of an Aquatic Invasive Species (Eurasian Watermilfoil) on Lakefront Property Values." *Ecological Economics*, Vol. 70 (2): 394-404.

VITAE

KEVIN J. BOYLE

(July 2015)

OFFICE:

Virginia Tech Program in Real Estate
430A Bishop-Favrao Hall (0156)
Blacksburg, VA 24061-0401
(540) 231-6301
kjboyle@vt.edu

HOME:

275 Orchard Hill Lane
Newport, VA 24128
(540) 544-3009

PRESENT POSITIONS:

Founding Director and Professor, Virginia Tech Program in Real Estate, Virginia Tech, April 2012 to present.

Professor, Agricultural and Applied Economics, Virginia Tech, September 2005 to Present.

Principal Faculty, Myers-Lawson School of Construction, Virginia Tech, November 2013 to present.

EDUCATION:

Ph.D. Agricultural Economics, University of Wisconsin

M.S. Agricultural and Resource Economics, Oregon State University

B.A. Economics, Distinction, University of Maine

PREVIOUS PROFESSIONAL POSITIONS:

Professor and Head, Department of Agricultural and Applied Economics, Virginia Tech, September 2005 to March 2012.

Chair, Department of Resource Economics and Policy, University of Maine, June 2003 to August 2005.

Founding Director, Center for Tourism Research and Outreach (CenTRO), University of Maine, September 2004 to August 2005.

Distinguished Maine Professor, Department of Resource Economics and Policy, Department of Wildlife Ecology, and Ecology and Environmental Sciences Program, University of Maine, September 2002 to August 2005

Libra Professor of Environmental Economics, Department of Resource Economics and Policy, Department of Wildlife Ecology, and Ecology and Environmental Sciences Program, University of Maine. September 1997 to August 2002.

Visiting Scientist, Rocky Mountain Experiment Station, USDA Forest Service, Fort Collins, CO. August 1999 to August 2000.

KEVIN J. BOYLE

2

Associate Professor, Department of Resource Economics and Policy and Department of Wildlife, University of Maine. September 1991 to August 1997.

Faculty Associate, Center for Economics Research, Research Triangle Institute. September 1992 to August 1994.

Visiting Scholar, Resource and Environmental Economics Program, Department of Agricultural and Resource Economics, North Carolina State University. September 1992 to July 1993.

Assistant Professor, Department of Agricultural and Resource Economics and Department of Wildlife, University of Maine. November 1986 to August 1991.

Resource Economist, HBRS, Madison, WI. June 1984 to May 1987.

Research Associate, Department of Agricultural Economics, University of Wisconsin, Madison, WI. January 1986 to November 1986.

Graduate Research Assistant, Department of Agricultural Economics, University of Wisconsin, Madison, WI. January 1982 to December 1985.

Economist, Land Management Planning, Siuslaw National Forest, Corvallis, OR. February 1981 to December 1981.

Graduate Research Assistant, Department of Agricultural and Resource Economics, Oregon State University, Corvallis, OR. September 1979 to January 1981.

Director of Animal Operations, Northeast Biomedical Laboratories, South Windham, ME. February 1979 to August 1979.

Research Assistant, University of Maine, Orono, ME. October 1975 to May 1978.

SELECTED UNIVERSITY SERVICE/LEADERSHIP:**A. Department of Resource Economics and Policy, University of Maine**

CSREES Review, Chair

Department Chair (elected position)

Faculty Hiring Committee, Chair (multiple terms) – Leads faculty hiring process

Graduate Coordinator – Leadership of graduate program

Personnel Action Committee (elected, multiple terms) – Conducts annual reviews and evaluates faculty for promotion

B. College of Natural Sciences, Forestry and Agriculture, University of Maine

Committee on Academic Affairs – Advises Dean on academic issues faced by the college

Maine Agriculture and Forest Experiment Station Research Council – Reviews and approves faculty Hatch and MacIntire-Stennis research project proposals

KEVIN J. BOYLE

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C. University of Maine

Chair, Committee on Tourism Research and Outreach – Committee to consider expanding the land-grant contributions across the university to Maine’s largest industry

Graduate Curriculum Committee – Reviews and approves changes to graduate curriculum for all units in the university

Phi Kappa Phi Leadership Committee – Primary responsibility for new members and awarding scholarships

Student Affairs Advisory Committee – Advise Dean of Student Affairs on issues relating to all aspects of student life on campus

D. Department, Agricultural and Applied Economics, Virginia Tech

Awards – Nominates faculty for university, professional and other awards

Department Head

Promotion and Tenure Committee (ex officio)

Seminar Committee, Chair

E. College of Agriculture and Life Sciences, Virginia Tech

Governance Council – Advises Dean on policy issues

Research Review Committee – Reviews faculty Hatch research project proposals

Strategic Planning Committee – Leads development of college 5-year strategic planning

F. Virginia Tech

Program Review Committee, Center for Housing Research

Real Estate Task Force, Chair

Strategic Planning Committee and Graduate Programs Subcommittee

G. Other Universities

Academic Program Review, Department of Economics, University of New Mexico.

Administrative Review, Department of Agricultural Economics, University of Kentucky.

CSREES Review, Department of Agricultural and resource Economics, West Virginia University.

Site Review Panel. "Center on Governance and Sustainability of Social-Ecological Systems (COGS)." Science and Technology Centers (STC), National Science Foundation.

KEVIN J. BOYLE

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SELECTED PUBLIC SERVICE:

U.S. EPA Science Advisory Board Environmental Economics Advisory Committee, 2013-2016.

Economics Panel, Workshop to Inform EPA's Review of the PM NAAQS", 2015.

Review Panel, U.S. EPA Star Grant proposals, "Water Quality Benefits" program, 2015.

Reviewer, "Meta-analysis of Willingness-to-Pay for Water Quality Improvements", U.S. Environmental Protection Agency, 2015.

Review Panel, U.S. Department of Transportation, "Standards and Guidelines in Estimating Livability Benefits of Transit Projects", 2014/15.

Review, "Chesapeake Bay TMDL Hedonic Analysis", U.S. Environmental Protection Agency, 2013.

Early Career Professional Mentor, American Agricultural Economics Association, 2012-13.

U.S. EPA Science Advisory Board Advisory Council on Clean Air Compliance, 2011-2013.

"Valuation of Ecosystem Health Due to Drought and Climate Change in Australia."
Commonwealth Scientific and Industrial Research Organization (CSIRO), Adelaide, AU, 2008-2013.

Expert Panel, Valuation of Groundwater Effects from Stormwater Infiltration Policies," U.S. Environmental Protection Agency, 2012.

Panel, "Social, Psychological, and Economic Impacts of Superfund and Other Contaminated Sites." Brown University Superfund Research Program and National Institute of Environmental Health Sciences, 2012.

Panel, "Potential Effects of Stormwater Management Measures on Property Values and Developer Opportunity Costs," U.S. Environmental Protection Agency, 2012.

Site Review Team, "Making Do with What We Have," Alberta Water Resources Institute, 2010.

Rosenberg Forum on Water Resources Management, Northwest Territories, Canada, 2009.

"Non-market Ecological Valuation of Coastal Marine Resources in California." National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara, 2007-2009.

Scientific Review Panel, "Nonuse Benefits Analysis for 316b Phase II Rule," Office of Water, U.S. Environmental Protection Agency, 2005.

"Committee on Assessing and Valuing Services of Aquatic and Related Terrestrial Ecosystems," National Research Council, 2002-04.

Resource Expert, "Governor's Blaine House Conference on Natural Resource-based Industries: Charting a New Course", State of Maine, 2003.

Reviewer, "Willingness to Pay for Coastal Water Quality Improvements." U.S. Environmental Protection Agency, Office of Water, 2000-01.

KEVIN J. BOYLE

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Reviewer, "Assessing Benefits of Drinking Water Regulations: A Guidance Manual." U.S. Environmental Protection Agency, Office of Policy and Office of Ground Water and Drinking Water, 1999.

"Groundwater Disinfection Regulations Benefits Group," U.S. EPA and National Water Research Institute. 1997.

"Interagency Work Group on Ecosystem Valuation," Economic Research Service, U.S. Department of Agriculture, 1997.

Reviewer, "National Benefit Estimates for 25 Years of the Clean Water Act." U.S. EPA, 1997.

Reviewer, "Ecosystem Valuation Framework." U.S. EPA, 1997.

Technical Advisor, "Study Commission on Property Rights and the Public Health, Safety and Welfare", Maine Legislature 1995.

"Recreational Fishing License Task Force," Maine Department of Marine Resources 1993-94.

"Interoffice Groundwater Valuation Group," U.S. Environmental Protection Agency 1993.

Expert Testimony, "National Estimates of Values for Protecting Groundwater Resources," U.S. Environmental Protection Agency, Economics Science Advisory Board, 1993.

Design Team, "Maine Conservation Fund License Plate," Department of Inland Fisheries, 1992-93.

Technical Advisor, "Subcommittee on National Survey of Fishing, Hunting and Wildlife-Associated Recreation regarding continuation of their National Survey of Hunting, Fishing and Wildlife Associated Recreation," U.S. Fish and Wildlife Service, 1992.

Technical Advisor, "Commission to Study the Impact of Game and Nongame Species on Maine's Economy," Maine Legislature 1988-90.

SELECTED PROFESSIONAL SERVICE:

Founding Chair, Council on Food Agriculture and Resource Economics (C-FARE) Blue Ribbon Panel on Natural Resources and Environmental Issues, 2011 to 2014.

Founding Chair, Land, Water and Environmental Economics Section (ENV), American Agricultural Economics Association, 2013/14.

Editorial Board, *Economics Research International*, 2010-2012.

Program Committee, Inaugural Summer Conference, Association of Environmental and Resource Economists, 2010-2011.

Board Member, Association of Environmental and Resource Economists, 2004-2006.

Chair, First offering of the "NAREA Award for Outstanding Public Service through Economics," 2002.

Organizing Committee and Host, Association of Environmental and Resource Economists Workshop, "Assessing and Managing Environmental and Public Health Risks," 2001.

KEVIN J. BOYLE

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Past President (1999/00), President (1998/99), President Elect (1997/98), Northeastern Agricultural and Resource Economics Association.

Associate Editor, *Journal of Environmental Economics and Management*, 1996-1999.

Associate Editor, *Marine Resource Economics*, 1997-99.

Board of Directors, Northeastern Agricultural and Resource Economics Association, 1992-1996.

Editorial Council, *Journal of Environmental Economics and Management*, 1989-91, 1994-95.

Nominating Committee, Association of Environmental and Resource Economists, 1992-93.

Chair, Recharter Committee, Western Regional Project W-133 (Benefits and Costs in Natural Resources Planning), 1991-92.

President 1989, Secretary 1988 Western Regional Project W-133, "Benefits and Costs in Natural Resource Planning".

Research Participant, National Academy of Sciences Review of the Glen Canyon Environmental Studies, November 1986.

AWARDS:

"Service Award." Land, Water and Environmental Economics Section, Agricultural and Applied Economics Association, 2015.

Publication of Merit, *Environmental and Resource Economics*, 2014. Boyle, Kevin J., Christopher C. Parmeter, Bent Boehlert, and Robert Paterson. 2013. "Due Diligence in Meta-Analyses to Support Benefit Transfers." *Environmental and Resource Economics*, Vol. 55 (3): 357-386. (<http://link.springer.com/article/10.1007/s10640-012-9630-y/fulltext.html>)

Carnegie Foundation for the Advancement of Teaching and Council for Advancement and Support of Education, "U.S. Professor of the Year, Maine," 2004

"Distinguished Maine Professor." University of Maine, 2003.

ESCAP/ACOP Leadership Development Program Certificate, 2003.

"Distinguished Member," Northeastern Agricultural and Resource Economics Association, 2002.

"2001 Presidential Research and Creative Achievement Award." University of Maine.

"Post-Tenure Merit Award." University of Maine, 2001.

"Outstanding Research Award." College of Natural Sciences, Forestry and Agriculture, University of Maine, 1999.

Research Publication Award for Best Academic Publication, James Madison University, 1993/94. Milliman, Scott R., Barry L. Johnson, Richard C. Bishop, James Kitchell, and Kevin J. Boyle. 1992. "The Bioeconomics of Resource Rehabilitation: A Commercial-Sport Analysis for a Great Lakes Fishery." *Land Economics*, Vol. 68 (2):191-210.

U.S.D.A. Certificate of Merit as an Economist, Land Management Planning Department, Siuslaw National Forest, U.S. Forest Service, 1981.

KEVIN J. BOYLE

7

Best Master's Thesis, Department of Agricultural and Resource Economics, Oregon State University, 1981.

Savery Master's Student of Excellence as the Outstanding Master's Student in the School of Agriculture, Oregon State University, 1980/81.

Carlton E. Crossland Scholarship for Outstanding Academic Achievement in Economics, College of Liberal Arts, University of Maine, 1976.

HONORARY SOCIETIES& RECONITIONS:

Gamma Sigma Delta, Phi Kappa Phi, AND Sigma Xi

Who's Who in the East, Who's Who in Emerging Leaders in America, Who's Who in the America, Who's Who in the World

SELECTED CONSULTING:

Association for the Environmental Health of Soils, Bangor Hydro Electric Company, Central Maine Power Company, Exxon USA, First Wind, Harvard Institute of International Development, Health Canada, Illinois Department of Conservation, Industrial Economics, Inter-American Development Bank, Maine Audubon, Maine Department of Inland Fisheries and Wildlife, Maine Paper Industry Information Office, Minnesota Forest Resources Council, National Oceanic and Atmospheric Administration, National Park Service, New Jersey Attorney General, New Jersey Department of Environmental Protection, New York Attorney General, New York Department of Environmental Conservation, Oak Ridge National Laboratory, Ohio Chapter Nature Conservancy, Oklahoma Attorney General, Pacific Gas and Electric, Triangle Economic Research, U.S. Bureau of Reclamation, U. S. Department of Justice, U. S. Department of the Interior, U.S. Environmental Protection Agency, U. S. Fish and Wildlife Service, Vermont Attorney General, Vermont Department of Fish and Wildlife, Wyoming Fish and Game Department.

GRANTS (total ~\$12.1 million):

“Linking land use decision-making, water quality, and lake associations to understand human-natural feedbacks in lake catchments.” Investigators: Kelly Coburn, Kevin J. Boyle, Cayelan Carey, Christopher J. Duffy, and Paul C. Hanson. Sponsor: National Science Foundation. Amount: \$1,799,931.

“A National Study of the Effects of Tree Canopy, Diversity and Health on Property Values.” Investigators: Kevin J. Boyle, Kelly Coburn, Andrew McCoy, Eric Wiseman and Thomas Holmes. Sponsor: U.S. Forest Service. Amount: \$84,593.

“Modeling Sociobehavioral Resilience during Epidemics to Reduce Health Disparities.” Investigators: Achla Marathe, Kaja M. Abbas, Kevin J. Boyle, Jiangzhou Chen, Stephen G. Eubank, Bryan L. Lewis, Pamela M. Murray-Tuite, Hazhir Rahmandad and Samarath Swarup. Sponsor: National Institutes of Health. Amount: \$1,032,334.

“A National Study of the Effects of Tree Canopy, Diversity and Health on Property Values.” Investigators: Kevin J. Boyle, Kelly Coburn, Eric P. Wiseman and Andrew P. McCoy. Sponsor: U.S. Forest Service. Amount: \$44,593.

KEVIN J. BOYLE

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-
- “Customary and Reasonable Fees for Real Estate Appraisals in the Commonwealth of Virginia.” Investigators: Drew Sanderford, Kevin J. Boyle and Andrew P. McCoy. Sponsor: Virginia Coalition of Appraisal Professionals. Amount: \$10,000.
- “Primer Workshop.” Investigator: Kevin J. Boyle. Sponsor: U. S. Forest Service. Duration: 2012-2017. Amount: \$20,000.
- “Large-scale Hedonic Property Value Analysis of Forest Pest Impacts Related to Climate Change, Phase II.” Investigators: Kevin J. Boyle, Klaus Moeltner, Randolph Wynne and Christine Blinn. Sponsor: U. S. Forest Service. Duration: 2012-2013. Amount: \$140,000.
- “Large-scale Hedonic Property Value Analysis of Forest Pest Impacts Related to Climate Change, Phase I.” Investigators: Kevin J. Boyle, Klaus Moeltner, Randolph Wynne and Eric Wiseman. Sponsor: U. S. Forest Service. Duration: 2011-2012. Amount: \$79,085.
- “Meta-analysis of Forest-Based Hedonic Property Value Studies: Implications for Economic Valuation of Climate Change Impacts.” Investigators: Kevin J. Boyle, Klaus Moeltner, Randolph Wynne and Eric Wiseman. U. S. Forest Service. Duration: 2011-2012. Amount: \$38,472.
- “Institute for Critical Technology and Applied Science Doctoral Fellow.” Fellow: Yuan “Clara” Yuan. Duration: 2011-2015. Amount: \$142,448.
- “Dynamic Interactions of Monetary and Non-monetary Incentives in Weight Loss Interventions.” Investigators: You, Wendy, Kevin J. Boyle and Christopher Parameter. Sponsor: NIH. Duration: 2010-2012. Amount: \$407,586.
- “Integrated Management of Zoospore Pathogens and Irrigation Water Quality for a Sustainable Green Industry.” Investigators: Hong, Chuanxue, Kevin Boyle, and Gary Moorman. Sponsor: USDA-Specialty Crops. Duration: 2010-2015. Amount: \$2,729,649.
- “Virginia Tech AEEMS for Success.” Investigators: Dixie W. Reaves, Kevin J. Boyle and Rick Rudd. Sponsor: USDA-CSREES. Amount: \$116,000.
- “Farm Credit of Armenia.” Investigators: Boyle, Kevin and Douglas Flory. Sponsor: USDA, Foreign Agricultural Service. Duration: 2007-2009. Amount: \$437,118.
- “Validation of Benefit-Transfer Functions.” Investigators: Boyle, Kevin, Christopher Parmeter, Nicolai Kuminoff, and Jaren Pope. Sponsor: U. S. Environmental Protection Agency, EPA-G2006-STAR-G-1. Duration: 2007-2009. Amount: \$199,986.
- “Assessing the Regional Economic Impact of Protected Lands Adjacent to the 100 Mile Wilderness Section of the Appalachian Trail.” Investigators: Kevin J. Boyle and Kathleen P. Bell. Sponsor: Maine Department of Conservation. Duration: 2004-05. Amount: \$35,547.
- “Risk Assessment of Fish Consumption by Pregnant Women.” Investigator: Kevin J. Boyle, Sponsor: Maine Department of Human Services. Duration: 2003-04. Amount: \$12,650.
- “GK12 Sensors.” Investigators: John Vetelino, Kevin J. Boyle, and Constance Holden. Sponsor: National Science Foundation. Duration: 2004-05. Amount: \$536,566.
- “Economic Valuation of Avoiding Arsenic Exposure in Drinking Water.” Investigators: Kevin J. Boyle, and Kathleen P. Bell. Sponsor: U.S. EPA. Duration: 2002-04. Amount: \$259,825.

KEVIN J. BOYLE

9

“Measuring the Economic Damages from Oil Spills to Maine’s Marine Economy.” Investigators: Jonathan Rubin, Kevin J. Boyle, and Deirdre Mageean. Sponsor: Maine/New Hampshire Sea Grant Program. Duration: 2003-05. Amount: \$149,514.

“Experimental Tests of Provision Rules in Conjoint Analysis for Environmental Valuation.” Investigators: Laura Taylor, and Kevin J. Boyle. Sponsor: U.S. EPA. Duration: 2002-03. Amount: \$120,479.

“Economic Impacts of Hemlock Woolly Adelgid on Residential Forest Landscapes.” Investigators: Kathleen P. Bell, and Kevin J. Boyle. Sponsor: USDA Forest Service. Duration: 2002-03. Amount: \$75,024.

“Urban Regeneration through Environmental Remediation: Valuing Market-Based Incentives for Brownfields Development.” Investigators: Peter Meyer, Kris Wernstedt, Anna Alberini, and Kevin J. Boyle. Sponsor: U.S. EPA. Duration: 2002-04. Amount: \$277,388.

“Understanding Public Values Produced by Private Forests in the Southern U.S.” Investigator: Kevin J. Boyle. Sponsor: Forest Service, U.S. Department of Agriculture. Duration: 2001-03. Amount: \$57,350.

“National Policy Implications of the Demand for Open Space.” Investigator: Kevin J. Boyle. Sponsor: Economic Research Service, U.S. Department of Agriculture. Duration: 1999-04. Amount: \$105,445.

“Formulation Non-market Research Objective.” Investigator: Kevin J. Boyle. Sponsor: Rocky Mountain Research Station, U.S. Forest Service. Duration: 2000-01. Amount: \$19,110.

“Improved Information in Support of a National Strategy for Open Land Policies.” Investigators: Kevin J. Boyle, Larry Libby, Mary Ahearn, Anna Alberini, and John Bergstrom. Sponsor: National Research Initiative Competitive Grants Program, U.S. Department of Agriculture. Duration: 1999-2001. Amount: \$207,000.

“Cooperative Agreement to Study the Demand for Food Safety.” Investigators: Nancy Bockstael, Kevin Boyle, Alan Levy, Mario Teisl (Principal), Alan Randall, and Brian Roe. Sponsor: Center for Disease Control and Prevention. Duration: 1998-03. Amount: \$946,447.

“Ice Fishing and Open Water Fishing Survey of Angler Effort and Preferences.” Investigator: Kevin J. Boyle. Sponsor: Maine Department of Inland Fisheries and Wildlife. Duration: 1999-00. Amount: \$107,861.

“The Effect of National Wildlife Refuge Proximity on Property Prices.” Investigator: Kevin J. Boyle. Sponsor: U.S. Fish and Wildlife Service. Duration: 1998-00. Amount: \$145,770.

“Assessing Public Perceptions and Evaluating Public Preferences for Ecosystem Management and Forest Health.” Investigators: Kevin J. Boyle, and Daniel McCollum. Sponsor: U.S. Forest Service, Rocky Mountain Research Station. Duration: 1998-00. Amount: \$59,400.

“The Economic Impacts of Hunting, Fishing and Wildlife-Watching in Maine.” Investigators: Mario F. Teisl and Kevin J. Boyle. Sponsor: Maine Department of Inland Fisheries and Wildlife. Duration: 1998. Amount: \$7,724.

KEVIN J. BOYLE

10

-
- “A Study of the Effect of Lake-Water Quality on the Prices of Lake-Front Property in Maine, New Hampshire and Vermont.” Investigators: Kevin J. Boyle, and John Halstead. Sponsor: U.S. Geological Service. Duration: 1997-99. Amount: \$182,471.
- “1998 Wildlife Survey.” Investigators: Kevin J. Boyle, Brian Roach, and Mario F. Teisl. Sponsor: Maine Department of Inland Fisheries and Wildlife. Duration: 1997-98. Amount: \$122,462.
- “An Investigation of the Economic Value of Maine's Great Ponds.” Investigator: Kevin J. Boyle. Sponsor: Maine Department of Environmental Protection. Duration: 1997. Amount: \$32,872.
- “Do Interest Group Preferences Differ from Preferences of the General Public for Managed and Unmanaged Forest Ecosystems?” Investigators: Kevin J. Boyle, and Thomas P. Holmes. Sponsor: U.S. Forest Service, Southeastern Forest Experiment Station. Duration: 1996-98. Amount” \$17,000.
- “1996 Survey of Hunter Effort and Preferences.” Investigator: Kevin J. Boyle. Sponsor: Maine Department of Inland Fisheries and Wildlife. Duration: 1996-97. Amount: \$105,899.
- “The Effects of Agriculture on Wildlife: A Study of Nonuse Values.” Investigators: Kevin J. Boyle, and Richard C. Bishop. Sponsor: U.S. Department of Agriculture, Economic Research Service. Duration: 1995-97. Amount: \$280,000.
- “Public Preferences for Managed and Unmanaged Forest Ecosystems.” Investigators: Kevin J. Boyle, and Thomas P. Holmes. Sponsor: U.S. Forest Service, Southeastern Forest Experiment Station. Duration: 1995-97. Amount: \$9,000.
- “A Hedonic Property Value Study of the Economic Value of Protecting Water Quality in Maine Lakes.” Investigator: Kevin J. Boyle. Sponsor: U.S. Geological Service. Duration: 1995-96. Amount: \$57,120.
- “Open Water Fishing Survey of Angler Effort and Preferences.” Investigator: Kevin J. Boyle. Sponsor: Maine Department of Inland Fisheries and Wildlife. Duration: 1994-95. Amount: \$83,322.
- “Hedonic-Price Study of Water Quality in Maine's Lakes.” Investigator: Kevin J. Boyle. Sponsor: Maine Department of Environmental Protection and Water Resources Institute, University of Maine. Duration 1994-95. Amount: \$25,093.
- “Meta-Analysis of Response Rates to Contingent-Valuation Surveys.” Investigators: Kevin J. Boyle, V. Kerry Smith, and Donald Epp. Sponsor: U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station. Duration: 1994-95. Amount: \$39,000.
- “The Effects of Substitutes on Economic Value Estimates of Forest Ecosystem Health.” Investigators: Kevin J. Boyle, and Thomas P. Holmes. Sponsor: U.S. Forest Service, Southeastern Forest Experiment Station. Duration: 1993-95. Amount: \$25,000.
- “Ice Fishing Survey of Angler Effort and Preferences.” Investigator: Kevin J. Boyle. Sponsor: Maine Department of Inland Fisheries and Wildlife. Duration: 1994. Amount: \$86,485.

KEVIN J. BOYLE

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“Economic Valuation of Groundwater Resources by the U.S. Environmental Protection Agency.”
Investigators: Kevin J. Boyle, and John C. Bergstrom. Sponsor: U.S. Environmental
Protection Agency, Cooperative Agreement CR818760-01-0. Duration: 1993-94. Amount:
\$24,637.

“Review of Contingent-Valuation Studies of the Benefits of Groundwater Protection.”
Investigator: Kevin J. Boyle. Sponsor: U.S. Environmental Protection Agency, Cooperative
Agreement CR818760-01-0. Duration: 1993-94. Amount: \$7,550.

“Analysis of Contingent-Valuation Data from the 1991/92 National Survey of Hunting, Fishing
and Wildlife Associated Recreation.” Investigator: Kevin J. Boyle. Sponsor: U.S. Fish and
Wildlife Service. Duration: 1992-94. Amount: \$25,000.

“Benefit-Cost Analysis of Atlantic Salmon Restoration on the Penobscot River.” Investigators:
Kevin J. Boyle, Stephen D. Reiling, and Mario F. Teisl. Sponsor: Bangor Hydro-Electric, Co.
Duration 1991-92. Amount: \$98,378.

“An Economic Evaluation of Consumptive and Nonconsumptive Uses of Maine's Fish and
Wildlife Resources: Addendum.” Investigators: Kevin J. Boyle, Stephen D. Reiling, and
Mario Teisl. Sponsor: Maine Department of Inland Fisheries and Wildlife. Duration: 1990-
1991. Amount: \$46,666.

“Developing Statistical Models to Update State Level Data Collected by the National Survey of
Fishing, Hunting and Wildlife-Associated Recreation. Investigator: Kevin J. Boyle. Sponsor:
U.S. Fish and Wildlife Service. Duration: 1990-1991. Amount: \$7,000.

“Economic Impacts of Improved Sport Fisheries on the Lower Kennebec River Watershed.”
Investigators: Kevin J. Boyle, John R. Moring, and Stephen D. Reiling. Sponsor: Maine
Department of Marine Resources. Duration: 1989-1991. Amount: \$46,000.

“Economic Benefits of Big-Game Hunting.” Investigators: Kevin J. Boyle, and Stephen D.
Reiling. Sponsor: U.S. Forest Service, Rocky Mountain Forest and Range Experiment
Station. Duration: 1989-91. Amount: \$22,660.

“Sustainable Crop and Livestock Production.” Investigators: Faculty of Sustainable Agriculture,
University of Maine. Sponsor: Jessie Smith Noyes Foundation. Duration: 1988-1991.
Amount: \$60,000.

“Analysis and Reporting of Data from a Comprehensive Survey of Marine, Sport Fishing in
Maine.” Investigators: Kevin J. Boyle, and Stephen D. Reiling. Sponsor: University of Maine
Sea Grant Program. Duration: 1990. Amount: \$9,950.

“An Economic Evaluation of Consumptive and Nonconsumptive Uses of Maine's Fish and
Wildlife Resources.” Investigators: Kevin J. Boyle, and Stephen D. Reiling. Sponsors:
Maine Legislative Commission to Study the Impact of Game and Nongame Species on Maine's
Economy, Maine Department of Inland Fisheries and Wildlife, and Maine Department of
Marine Resources. Duration: 1988-1990. Amount: \$396,267.

“Design of Contingent-Valuation Questions for the 1990 National Survey of Fishing, Hunting, and
Wildlife-Associated Recreation.” Investigator: Kevin J. Boyle. Sponsor: U.S. Fish and
Wildlife Service. Duration: 1989-90. Amount: \$9,272.

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“An Examination of the Economic Value and Use of Maine's Fish and Wildlife Resources.”

Investigator: Kevin J. Boyle. Sponsors: Maine Department of Inland Fisheries and Wildlife, and Forests for the Future Program, Maine Department of Conservation. Duration: 1987. Amount: \$16,060.

PUBLICATIONS:

(h-index = 40, <http://scholar.google.com/citations?user=m3NjIDUAAAAJ&hl=en&oi=ao>)

A. Journal Articles – Under Review and In Process

1. Cultice, Alyssa, Darrell J. Bosch, James W. Pease and Kevin J. Boyle. “Horticultural Growers’ Willingness to Adopt Recycling of Irrigation Water”. (Revise and resubmit)
2. Boyle, K.J., R.W. Paterson, R.C. Carson, B. Kanninen, and J. Neumann. “Valuing Shifts in the Distribution of Visibility.” (Revise and resubmit)
3. Siriwardena, Shyamani, Kevin J. Boyle, Thomas P. Holmes and Elizabeth Heir. “The amenity value of residential trees: A meta-analysis of hedonic property-value studies.” (Revise and resubmit)
4. Sanderford, Andrew R., Weibin Xu, and Kevin J. Boyle. “Towards Customary and Reasonable Fees in Residential Real Estate Appraisal”.
5. Li, Xiaoshu, and Kevin J. Boyle. “Do Interest Group Preferences Represent Public Preferences in Forest Protection Policy?”
6. Boatwright, Jessica A., and Kevin J. Boyle. “Siting Community Wind Farms: An Investigation of NIMBY.”
7. Hartter, David, Kevin J. Boyle, James Pease and Darrell Bosch. “Understanding consumers’ ornamental plant preferences for disease free and water conservations labels”.
8. Kaul, Sapna, Kevin J. Boyle and Wen You. “Determinants and Impacts of Location of Childbirth in a Developing Country.”

B. Journal Articles – Published

9. Yuan, Yuan, Kevin J. Boyle and Wen You. “Sample Selection, Individual Heterogeneity and Regional Heterogeneity in Valuing Farmland Conservation Easements.” *Land Economics* (forthcoming).
10. Dymond, Randy, Kevin J. Boyle, Yvan J. Beliveau, Rosemary Carucci Goss, Raman Kumar and P. Eric Wiseman. “Development of an Interdisciplinary Undergraduate Program in Real Estate: Breaking Down University Silos.” *Journal of Real Estate Practice and Education* (forthcoming).
11. Tanellari, Eftila, Darrell Bosch, Kevin Boyle and Elton Mykerezi. “On consumers’ attitudes and willingness to pay for improved drinking water quality and infrastructure.” *Water Resources Research* (forthcoming).
(<http://onlinelibrary.wiley.com/doi/10.1002/2013WR014934/full>)

12. Cohen, Jed, Klaus Moeltner, Christine Blinn, Kevin J. Boyle and Thomas P. Holmes.
 “Exploiting Weak Complementarity in Property Value Models: The Case of the Mountain Pine Beetle in the Colorado Front Range.” *Environmental and Resource Economics* (forthcoming).
<http://su8bj7jh4j.scholar.serialssolutions.com/?sid=google&auinit=J&aulast=Cohen&atitle=Hedonic+Valuation+with+Translating+Amenities:+Mountain+Pine+Beetles+and+Host+Trees+in+the+Colorado+Front+Range&id=doi:10.1007/s10640-014-9856-y>
13. Boyle, Kevin J., Mark Morrison, Darla Hatton MacDonald, and Roderick Duncan.
 “Investigating Differences between Internet and Mail Implementation of Stated-Preference Studies While Controlling for Differences in Sample Frames”. *Environmental and Resource Economics* (forthcoming). <http://link.springer.com/article/10.1007/s10640-015-9876-2>
14. Hashemi, Ali, Wen You, Kevin J. Boyle, Christopher F. Parmeter, Barbara Kanninen and Paul A. Estabrooks. 2015. “Identifying Financial Incentive Designs to Enhance Participation in Weight Loss Programs.” *Journal of Obesity & Weight Loss Therapy*, Vol. 5 (247):2.
<http://www.omicsgroup.org/journals/identifying-financial-incentive-designs-to-enhance-participation-in-weight-loss-programs-2165-7904-5-247.pdf>
15. Zhang, Congwen, Kevin J. Boyle and Nicolai V. Kuminoff. “Partial Identification of Hedonic Demand Functions.” *Journal of Environmental Economics and Management*, Vol. 71:180-197. <http://www.sciencedirect.com/science/article/pii/S0095069615000170>
16. Aziz, Sonia, Kevin J. Boyle and Thomas Crocker. “Parental Decisions, Child Health and Valuation of Avoiding Arsenic in Drinking Water in Rural Bangladesh.” *Journal of Water and Health*, Vol. 13 (1): 152-167. <http://www.iwaponline.com/jwh/013/jwh0130152.htm>
17. Li, Xiaoshu, K. J. Boyle, Thomas P. Holmes, and Genevieve Pullis-LaRouche. 2014. The effect of on-site forest experience on stated preferences for low impact timber harvesting programs. *Journal of Forest Economics*, Vol. 20 (4): 348-362.
<http://www.sciencedirect.com/science/article/pii/S110468991400035X>)
18. Li, Xiaoshu, Evan L. Preisser, Kevin J. Boyle, Thomas P. Holmes, Andrew Liebhold and David Orwig. 2014. “Potential social and economic impacts of the hemlock woolly adelgid in Southern New England.” *Southern Naturalist/Northeastern Naturalist*, Vol. 13 (6): 130-146.
<http://www.bioone.org/doi/pdf/10.1656/058.013.s609>
19. Aziz, Sonia, Khwaja M. Sultanul Aziz and Kevin J. Boyle. 2014. "Arsenic in drinking water in Bangladesh: factors affecting child health." *Frontiers in Public Health*, Volume 2, Article 57: 1-6. doi: 10.3389/fpubh.2014.00057
<http://journal.frontiersin.org/Journal/10.3389/fpubh.2014.00057/abstract>
20. Tobias Börger, Nicola J. Beaumont, Linwood Pendleton, Kevin J. Boyle, Philip Cooper, Stephen Fletcher, Tim Haab, Michael Hanemann, Tara L. Hooper, S. Salman Hussain, Rosimeiry Portela, Mavra Stithou, Joanna Stockill, Tim Taylor and Melanie C. Austen. 2013. “Incorporating Ecosystem Services in Marine Planning: The Role of Valuation.” *Marine Policy*, Vol. 46:161-170.
<http://www.sciencedirect.com/science/article/pii/S0308597X14000311>

21. Boatwright, Jessica, Kurt Stephenson, Kevin Boyle, and Sara Nienow. 2013. "Stormwater Control Infrastructure and Residential Property Values." *Journal of Water Resources Planning and Management*, Vol. 140 (4): 524-532. ([http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)WR.1943-5452.0000356](http://ascelibrary.org/doi/abs/10.1061/(ASCE)WR.1943-5452.0000356))
22. Kaul, Sapna, Kevin J. Boyle, Nicolai V. Kuminoff, Christopher F. Parmeter and Jaren C. Pope. 2013. "What Can We Learn from Benefit Transfer Errors? Evidence from 20 Years of Research on Convergent Validity." *Journal of Environmental Economics and Management*, Vol. 66 (1): 90-104. (<http://www.sciencedirect.com/science/article/pii/S0095069613000168>)
23. Boyle, Kevin J., Christopher C. Parmeter, Bent Boehlert, and Robert Paterson. 2013. "Due Diligence in Meta-Analyses to Support Benefit Transfers." *Environmental and Resource Economics*, Vol. 55 (3): 357-386. (<http://link.springer.com/article/10.1007/s10640-012-9630-y/fulltext.html>)
24. Kotchen, Matthew J., Kevin J. Boyle and Anthony A. Leiserowitz. 2013. "Policy-Instrument Choice and Benefit Estimates for Climate-Change Policy in the United States." *Energy Policy*, Vol. 55: 617-625. (<http://www.sciencedirect.com/science/article/pii/S0301421512011111>)
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26. Teisl, Mario F., Eric Fromberg, Andrew E. Smith, Kevin J. Boyle and Haley M. Engelberth. 2011. "Awake at the Switch: Improving Fish Consumption Advisories for At-risk Women." *Science of the Total Environment*, Vol. 409 (18):3257-3266. (<http://www.sciencedirect.com/science/article/pii/S0048969711004803>)
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29. Boyle, Kevin J., Nicolai V. Kuminoff, Christopher F. Parmeter and Jaren C. Pope. 2010. "The Benefit Transfer Challenges." *Annual Review of Resource Economics*, Vol. 2: 161-182. (<http://www.annualreviews.org/doi/abs/10.1146/annurev.resource.012809.103933?journalCode=resource>)
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34. Neumann, Bradley C., Kevin J Boyle and Kathleen P. Bell. 2009. "Property Price Effects of a National Wildlife Refuge: Great Meadows National Wildlife Refuge in Massachusetts." *Land Use Policy*, Vol. 26 (4): 1011-1019.
35. Özdemir, Semra, and Kevin J. Boyle. 2009. "Convergent Validity of Attribute-Based, Choice Questions in Stated-Preference Studies." *Environmental and Resource Economics*, Vol. 42 (2): 247-264.
36. Parson, George, Ami Kang, Christopher Leggett and Kevin J. Boyle. 2009. "Valuing Beach Closures on the Padre Island National Seashore." *Marine Resource Economics*, Vol. 24 (3): 213-235.
37. Paterson, Robert W., Kevin J. Boyle, Christopher F. Parmeter, James E. Neuman and Paul De Civita. 2008. "Heterogeneity in Preferences for Smoking Cessation." *Health Economics*, Vol. 17 (12): 1363-1377).
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39. Moeltner, Klaus, Kevin J. Boyle and Robert W. Paterson. 2007. "Meta-Analysis and Benefit Transfer for Resource Valuation: Addressing Classical Challenges with Bayesian Modeling." *Journal of Environmental Economics and Management*, Vol. 53 (2): 250-269.
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43. Holmes, Thomas D., and Kevin J. Boyle. 2005. "Dynamic Learning and Context-Dependence in Sequential, Attribute-Based, Stated-Preference Valuation Questions." *Land Economics*, Vol. 81 (1): 114-126.
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45. Scrogin, David, Kevin Boyle, George Parsons, and Andrew Plantinga. 2004. "Effects of Regulations on Expected Catch, Expected Harvest, and Site Choice of Recreational Anglers." *American Journal of Agricultural Economics*, Vol. 86 (4): 963-974.
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47. Boyle, Kevin, and Roy Bouchard. 2003. "Water Quality Effects on Property Prices in Northern New England." *Lakelines*, Vol. 23 (3): 24-27.
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C. Books and Monographs

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225. Ebert, Ellen, and Kevin J. Boyle. 1992. "Consumption of Freshwater Fish by Maine Anglers." ChemRisk, Division of McLaren/Hart. Report to Maine Paper Industry Information Office.
 226. Teisl, Mario F., Kevin J. Boyle, and Stephen D. Reiling. 1991. "Highlights from the 1988 Survey of Migratory Waterfowl Hunters in Maine." Staff Paper ARE 434, Department of Agricultural and Resource Economics, University of Maine.
 227. Teisl, Mario F., Kevin J. Boyle, and Stephen D. Reiling. 1991. "Highlights from the 1988 Survey of Ice Fishing in Maine." Staff Paper ARE 431, Department of Agricultural and Resource Economics, University of Maine.
 228. Reiling, Stephen D., Mario F. Teisl, and Kevin J. Boyle. 1991. "Highlights from the 1988 Survey of Bear Hunting in Maine." Staff Paper ARE 430, Department of Agricultural and Resource Economics, University of Maine.
 229. Boyle, Kevin J., Teisl, Mario F., Moring, John R., and Reiling, Stephen D. 1991. "Economic Benefits Accruing to Sport Fisheries on the Lower Kennebec River from the Provision of Fish Passage at Edwards Dam or from the Removal of Edwards Dam." Staff Paper ARE 429, Department of Agricultural and Resource Economics, University of Maine.
 230. Boyle, Kevin J., Marcia L. Phillips, and Stephen D. Reiling. 1991. "Highlights from the 1989 Maine Wildlife Survey." Staff Paper 425, Department of Agricultural and Resource Economics, University of Maine.
 231. Teisl, Mario, Kevin J. Boyle, and Stephen D. Reiling. 1990. "Highlights from the Survey of Hunters Holding a 1988 Maine Hunting License." Staff Paper ARE 424, Department of Agricultural and Resource Economics, University of Maine.
 232. Boyle, Kevin J., Stephen D. Reiling, Mario Teisl, and Marcia L. Phillips. 1990. "A Study of the Impact of Game and Nongame Species on Maine's Economy." Staff Paper ARE 423, Department of Agricultural and Resource Economics, University of Maine.
 233. Boyle, Kevin J. 1990. "Design of Contingent-Valuation Questions for the 1991 National Survey of Fishing, Hunting and Wildlife-Associated Recreation." Final report to the Federal Aid Division, U.S. Fish and Wildlife Service, Washington, D.C.
 234. Boyle, Kevin J., Robert K. Roper, and Stephen D. Reiling. 1990. "Highlights from the 1988 Survey of Open Water Fishing in Maine." Staff Paper ARE 416, Department of Agricultural and Resource Economics, University of Maine.
 235. Phillips, Marcia L., Kevin J. Boyle, and Stephen D. Reiling. 1990. "Highlights from the Survey of Anglers Holding a 1988 Maine Fishing License." Staff Paper ARE 415, Department of Agricultural and Resource Economics, University of Maine.
 236. Potter, Deanna M., Kevin J. Boyle, and Stephen D. Reiling. 1990. "Highlights from the 1989 Survey of Maine Turkey Hunters." Staff Paper ARE 413, Department of Agricultural and Resource Economics, University of Maine.

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237. Boyle, Kevin J., Mario Teisl, Marcia L. Phillips, Stephen D. Reiling, and Lauri A. Fagerquist. 1990. "Economic Values and Economic Impacts Associated with Consumptive and Nonconsumptive Uses of Maine's Fish and Wildlife Resources." Staff Paper ARE 410, Department of Agricultural and Resource Economics, University of Maine.
 238. Boyle, Kevin J., Marcia L. Phillips, and Stephen D. Reiling. 1989. "Highlights from the 1988 Survey of Maine Trappers." Staff Paper ARE 396, Department of Agricultural and Resource Economics, University of Maine.
 239. Boyle, Kevin J., Marcia L. Phillips, and Stephen D. Reiling. 1989. "Highlights from the Survey of Anglers Holding a 1987 Maine Fishing License." Staff Paper ARE 398, Department of Agricultural and Resource Economics, University of Maine.
 240. Phillips, Marcia L., Kevin J. Boyle, and Stephen D. Reiling. 1989. "Highlights from the Survey of Hunters Holding a 1987 Maine Hunting License." Staff Paper ARE 397, Department of Agricultural and Resource Economics, University of Maine.
 241. Boyle, Kevin J., Stephen D. Reiling, and Marcia L. Phillips. 1989. "Highlights From the Survey of 1988 Moose Hunters." Staff Paper ARE 392, Department of Agricultural and Resource Economics, University of Maine.
 242. Boyle, Kevin J., Marcia L. Phillips, Stephen D. Reiling, and Lawrence K. Demirelli. 1989. "Economic Values and Economic Impacts Associated with Consumptive Uses of Maine's Fish and Wildlife Resources." Staff Paper ARE 391, Department of Agricultural and Resource Economics, University of Maine.
 243. Baumgartner, Robert M., and Kevin J. Boyle. 1987. "Customer Acceptance of the Cycle-to-Shed Conversion for PG&E's Residential Peak Load Reduction Program." Report to Pacific Gas and Electric Company, HBRS.
 244. Bishop, Richard C., Kevin J. Boyle, Michael P. Welsh, Robert M. Baumgartner, and Pamela R. Rathbun. 1987. "Glen Canyon Dam Releases and Downstream Recreation: An Analysis of User Preferences and Economic Values." Report to the U.S. Bureau of Reclamation.
 245. Bishop, Richard C., and Kevin J. Boyle. 1985. "The Economic Value of Illinois Beach State Nature Preserve." Final report to the Illinois Department of Conservation.
 246. Boyle, Kevin J., and Richard C. Bishop. 1984. "A Comparison of Contingent Valuation Techniques." Staff Paper No. 222, Department of Agricultural Economics, University of Wisconsin-Madison.
 247. Boyle, Kevin J., and Richard C. Bishop. 1984. "Lower Wisconsin River Recreation: Economic Impacts and Scenic Values." Staff Paper 216, Department of Agricultural Economics, University of Wisconsin.
 248. Boyle, Kevin J., and Richard C. Bishop. 1984. "Economic Benefits Associated with Boating and Canoeing on the Lower Wisconsin River." Economic Issues, No. 84, Department of Agricultural Economics, University of Wisconsin.

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249. Boyle, Kevin J., Ronald A. Oliveira, and James K. Whittaker. 1982. "An Econometric Model of Barley Acreage Response to Changes in Prices and Wheat Acreage in the Northwest." Special Report No. 647, Agricultural Experiment Station, Oregon State University.
 250. Boyle, Kevin J., and Frederick W. Obermiller. 1982. "Modifying Static Input-Output Models to Incorporate New Sectors." Technical Paper No. 6444, Agricultural Experiment Station, Oregon State University.
 251. Obermiller, Frederick W., Kevin J. Boyle, and David Lambert. 1981. "Final Report: Morrow County Input-Output Model." Department of Agricultural and Resource Economics, Oregon State University.
 252. Wilson, James A., Wayne Meserve, Everett Maxim, and Kevin J. Boyle. 1977. "The Economic Feasibility of the Installation of Chilled and Refrigerated Seawater Systems in New England (Herring) Carrier Vessels." Social Science Research Institute, University of Maine.

PRESENTATIONS:

1. Yuan, Yuan, Wen You, Kevin Boyle, and Christopher Parmeter. 2015. "Evaluation of an Alternative Attribute Non-attendance Elicitation Format." Selected poster, Annual Meeting, Agricultural and Applied Economics Association, San Francisco, CA.
2. Boyle, Kevin J. 2015. "Analysis and Reporting of SP Surveys." Invited policy session, Annual Meeting of the European Association of Environmental and Resource Economists.
3. Boyle, Kevin J. 2015. "Guidelines for the Reporting and Use of Stated-Preference Estimates." Invited paper, Annual Meeting of the Association of Environmental and Resource Economists, San Diego, CA.
4. Boyle, Kevin J. 2015. "What Happens When the Bugs Come to Town? NUMBY – Not Until My Backyard." School of Public and Environmental Affairs, Indiana University.
5. Boyle, Kevin J. 2015. "What Happens When the Bugs Come to Town? NUMBY – Not Until My Backyard." Department of Applied Economics, University of Georgia.
6. Boyle, Kevin J. 2015. "What Happens When the Bugs Come to Town? NUMBY – Not Until My Backyard." Department of Biological Sciences, Dartmouth College.
7. Boyle Kevin J. "A Vision for Leadership." Department of Economics, Iowa State University.
8. Boyle, Kevin, David Hartter, James Pease, Darrell Bosch, and Weibin Xu. 2014. "Consumer Preferences for Ornamental Plants Grown with Water Conservation Practices." Invited paper, Annual Meeting, Agricultural and Applied Economics Association, Minneapolis, MN.
9. Li, Xiaoshu, Kevin Boyle, Thomas Holmes, Evan Pressier, Andrew Liebhold, and David Orwig. 2014. "The Effect of Spatial Interpolation on the Hedonic Model: A Case of Forest Damages." Selected paper, Annual Meeting, Agricultural and Applied Economics Association, Minneapolis, MN.
10. Yuan, Yuan, Wen You, Kevin Boyle, and Barbara Kanninen. 2014. "Designing Financial Incentives to Maximize Participation of Target Populations in Weight Loss Programs."

Selected poster, Annual Meeting, Agricultural and Applied Economics Association, Minneapolis, MN.

11. Li, Xiaoshu, Kevin J. Boyle, Evan Preisser, Thomas P. Holmes, David A. Orwig and Andrew Liebhold. 2014. "The Effect of Spatial Interpolation on the Hedonic Model: a Case of Forest Pest Damages." Invited Policy Presentation, World Congress of Environmental and Resource Economists, Istanbul, Turkey.
12. Boatwright, Jessica, and Kevin J. Boyle. 2014. "Is NIMBY a Factor in Siting Community Wind Farms?" Invited Policy Presentation, World Congress of Environmental and Resource Economists, Istanbul, Turkey.
13. Boyle, Kevin J. 2014. "Developing Contemporary Standards for Stated-Preference Valuation: The need for updated protocols." Invited Policy Presentation, World Congress of Environmental and Resource Economists, Istanbul, Turkey.
14. Boyle, Kevin J. 2014. "Developing Contemporary Standards for Stated-Preference Valuation." Invited Policy Presentation, World Congress of Environmental and Resource Economists, Istanbul, Turkey.
15. Kaul, Sapna, and Kevin J. Boyle. 2013. "Benefit Transfer method ... The Good, the Bad and the Ugly." Integrating Biodiversity and Ecosystem Services into Project Appraisal, Inter-American Development Bank, Washington, DC.
16. Paterson, Robert, Kevin J. Boyle, Richard T. Carson, Barbara Kanninen and Christopher Leggett. 2013. "Valuing Changes in Visibility in National Parks and Wilderness Areas: Shifting Distributions." Selected paper, Annual Meeting of the Association of Environmental and Resource Economists, Banff, Canada.
17. Cohen, Jed, Klaus Moeltner, Christine Blinn, Kevin J. Boyle and Thomas P. Holmes. 2013. "Exploiting Weak Complementarity in Property Value Models: The Case of the Mountain Pine Beetle in the Colorado Front Range." Selected paper, Annual Meeting of the Association of Environmental and Resource Economists, Banff, Canada.
18. Xiaoshu Li, Kevin J. Boyle, Evan Preisser, Thomas P. Holmes, Klaus Moeltner, and David A. Orwig. 2013. "Is the Hemlock Woolly Adelgid Impact on Property Values: a 'Canary of Global Warming'?" Selected paper, Annual Meeting of the Association of Environmental and Resource Economists, Banff, Canada.
19. Cultice, Alyssa K., Darrell J. Bosch, James W. Pease and Kevin J. Boyle. 2013. "Horticultural producers' willingness to adopt water recirculation technology in the Mid-Atlantic region." Selected Paper, Agricultural and Applied Economics Association Annual Meeting, Washington, DC.
20. You, Wen, Yuan Yuan and Kevin J. Boyle. 2013. "Decision frame heterogeneity in Choice Experiment Analysis: A case study in weight loss." Selected Paper, Agricultural and Applied Economics Association Annual Meeting, Washington, DC.
21. Boyle, Kevin J. 2013. "Thoughts on Ocean Ecosystem Valuation." A workshop to build a common UK-US perspective on marine ecosystem economics to support marine spatial planning, Plymouth Marine Laboratory, Plymouth, England.

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22. Boyle, Kevin J., Jed Cohen, Sapna Kaul, Klaus Moeltner, Christopher Parmeter. 2012. "Are Hedonic Estimates Reliable During a Real Estate Bubble?" Invited presentation, Annual meeting of the Association of Environmental and Resource Economists, Asheville, NC.
23. Kaul, Sapna, Kevin J. Boyle, Nicolai V. Kuminoff, Christopher F. Parmeter and Jaren C. Pope. 2012. "What Can We Learn from Benefit Transfer Errors? Evidence from 20 Years of Research on Convergent Validity." Selected Paper, Annual Meeting of the European Association of Environmental and Resource Economists, Prague, Czech Republic.
24. Yuan, Yuan, Kevin J. Boyle, Wen You and Harry M Fuller. 2012. "A Nationwide Comparison of Farmland Conservation Easement Valuation." Selected Paper, Agricultural and Applied Economics Association Annual Meeting, Seattle, WA.
25. Li, Xiaoshu, Kevin j. Boyle and Genevieve LaRouche. 2012. "Does On-site Experience Affect Responses to Stated Preference Questions? Selected Paper, Agricultural and Applied Economics Association Annual Meeting, Seattle, WA.
26. Kaul, Sapna, Wen You and Kevin J. Boyle. 2012. "Delivery at Home versus Delivery at a Health Care Facility – A Case Study of Bihar, India." Selected Paper, Agricultural and Applied Economics Association Annual Meeting, Seattle, WA.
27. Boyle, Kevin J. 2012. "Successful Participation in Interdisciplinary Grants." National Institute of Food and Agriculture webinar.
28. Kaul, Sapna, Kevin J. Boyle, Nicolai V. Kuminoff, Christopher F. Parmeter and Jaren C. Pope. 2012. "What Can We Learn from Benefit Transfer Errors? Evidence from 20 Years of Research on Convergent Validity." Appstate Environmental and Resource Economics Workshop, Walker College of Business and the Center for Economic Research and Policy Analysis, Appalachian State University, Boone, NC.
29. Kaul, Sapna, Kevin J. Boyle, Nicolai V. Kuminoff, Christopher F. Parmeter and Jaren C. Pope. 2011. "What Can We Learn from Benefit Transfer Errors? Evidence from 20 Years of Research on Convergent Validity." Invited presentation, Society for Risk Analysis Annual Meeting, Charleston, SC.
30. Zhang, Congwen, Nicolai Kuminoff and Kevin J. Boyle. 2011. "Partial Identification of hedonic Demand Functions." Invited presentation, *The Economics of Water Quality Improvement in Chesapeake Bay*, Workshop sponsored by U.S EPA and Resources for the Future, Washington, DC.
31. Boyle, Kevin J. 2011. "What Can We Learn from Benefit Transfer Errors? Evidence from 20 Years of Research on Convergent Validity." Invited presentation, *Theory, Science, and Statistics in the Use of Benefit Cost Analysis*, Benefit Cost Center, Evans School of Public Affairs, University of Washington, Washington, DC.
32. Boyle, Kevin J., Nicolai V. Kuminoff, Congwen Zhang and Kathleen P. Bell. 2011. "Does a Property-Specific Environmental health Risk Create a 'Neighborhood' Housing-Price Stigma?" Invited presentation, *Ground Water Summit*, National Ground Water Association, Baltimore, MD.

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33. Boyle, Kevin J. 2011. "Thoughts on Water/Site Contamination." Invited presentation, Vision 2025, E.I. du Pont de Nemours and Company.
34. Boyle, Kevin J., Richard T. Carson, Robert Paterson and Michael P. Welsh. 2011. "Valuation of Visibility in Class I Visibility Regions." Invited presentation, U.S. EPA, Office of Water, Research Triangle Park, NC.
35. Boyle, Kevin J., 2011. "Informing Participants in Stated Preference Studies." Invited presentation, U.S. EPA, Office of Water, Research Triangle Park, NC.
36. Boyle, Kevin J., 2011. "Policy Question for Valuation." Invited presentation, U.S. EPA, Office of Water, Research Triangle Park, NC.
37. Kaul, Sapna, Kevin J. Boyle, Jaren C. Pope, Christopher F. Parmeter and Nicolai V. Kuminoff. 2011. "Are Benefit-Transfer Errors Explainable or are Benefit Transfers Just a Shot in the Dark." Invited seminar, Department of Economics and School of Sustainability, Arizona State University.
38. Kevin J. Boyle. 2010. "Benefit-Transfer Validity." Stratus Consulting, Boulder, CO.
39. Boyle, Kevin J. 2011. "20 Years of Stated Preference Research." Invited presentation, Allied Social Science Meetings, Denver, CO.
40. Boyle, Kevin J., Sapna Kaul, Ali Hashemi and Xiaoshu Li. 2010. "Applicability of Benefit Transfers for Evaluation of Homeland Security Counterterrorism Measures." Invited, *Estimating the Benefits of Homeland Security Policies*, workshop sponsored by RTI International and Department of Homeland Security, Washington, DC.
(http://create.usc.edu/2010/09/estimating_the_benefits_of_hom.html, Session 2)
41. Boyle, Kevin J., Nicolai V. Kuminoff, Congwen Zhang and Kathleen P. Bell. 2010. "Does a Property-Specific Environmental health Risk Create a 'Neighborhood' Housing-Price Stigma?" Invited webinar, National Ground Water Association.
42. Boyle, Kevin J., Nicolai V. Kuminoff, Congwen Zhang and Kathleen P. Bell. 2010. "Does a Property-Specific Environmental health Risk Create a 'Neighborhood' Housing-Price Stigma?" Stratus Consulting, Boulder, CO.
43. Kevin J. Boyle. 2010. "Benefit-Transfer Validity." Keynote, 5th Annual Choice Modeling Workshop, University of South Australia.
44. Kevin J. Boyle. 2010. "Voices of Reason and Sober Second Thoughts." Keynote, 5th Annual Choice Modeling Workshop, University of South Australia.
45. Boyle, Kevin J., Christopher Parmater, Brent Boehlert and Robert Paterson. 2010. "Sample Selection and Robust Meta-Analysis Based Benefit Transfers." Selected, 4th World Congress of Environmental and Resource Economists, Montreal, Canada.
46. Hatton McDonald, Darla, Kevin J. Boyle, Mark Morrison and John Rose. 2010. "Untangling Differences in Values from Internet and Mail Stated Preference Studies." Selected, 4th World Congress of Environmental and Resource Economists, Montreal, Canada. "Untangling Differences in Values from Internet and Mail Stated Preference Studies." Invited, Annual Meeting, W2133, Tucson, AZ.

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47. Boyle, Kevin J. 2009. "Frontiers in Nonmarket Valuation." Keynote presentation, E-CReW 2009, Charles Sturt University, AU. (<http://www.ecrew.org.au/>)
48. Azziz, Sonia, Kevin J. Boyle and Thomas Crocker. 2009. "Valuation of Avoiding Arsenic in Rural Bangladesh: An Averting behavior Analysis." Selected paper, World Congress of Health Economists, Beijing, China.
49. Boyle, Kevin J. 2009. "Globalization, International Trade and Food Safety." Keynote address, 2nd Food and Agriculture update 2009: "Toward Agro-Health." United Arab Emirates University. (http://cfa.uaeu.ac.ae/college_news.shtml)
50. Azziz, Sonia, Kevin J. Boyle and Thomas Crocker. 2009. "Valuation of Avoiding Arsenic in Rural Bangladesh: An Averting behavior Analysis." Invited Presentation, Department of Agribusiness and Consumer Science, United Arab Emirates University.
51. Boyle, Kevin J., Nicolai V. Kuminoff, Congwen Zhang and Kathleen P. Bell. 2009. "Does a Property-Specific Environmental health Risk Create a 'Neighborhood' Housing-Price Stigma?" Invited Presentation, Department of Agribusiness and Consumer Science, United Arab Emirates University.
52. Azziz, Sonia, Kevin J. Boyle and Thomas Crocker. 2008. "Valuation of Avoiding Arsenic in Rural Bangladesh: An Averting behavior Analysis." Invited Presentation, *Camp Resources*, North Carolina State University.
53. Özdemir, Semra, and Kevin J. Boyle. 2008. "Convergent Validity of Attribute-Based, Choice Questions in Stated-Preference Studies." University of Sydney, Sydney, AU.
54. Bell, Kathleen, Shan Huang and Kevin J. Boyle. 2008. "Arsenic Contamination of Groundwater, Health Risks and Public Responses top Mass media Coverage." Commonwealth Scientific and Industrial Research Organization, Adelaide (CISRO), AU.
55. Boyle, Kevin J., Nicolai V. Kuminoff, Congwen Zhang and Kathleen P. Bell. 2008. "Does a Property-Specific Environmental health Risk Create a 'Neighborhood' Housing-Price Stigma?" Commonwealth Scientific and Industrial Research Organization, Adelaide (CISRO), AU.
56. Azziz, Sonia, Kevin J. Boyle and Thomas Crocker. 2008. "Valuation of Avoiding Arsenic in Rural Bangladesh: An Averting behavior Analysis." Centers for Disease Control, Atlanta, GA.
57. Paterson, Robert W., Kevin J. Boyle, Christopher F. Parmeter, James E. Neuman and Paul De Civita. 2008. "Heterogeneity in Preferences for Smoking Cessation." Centers for Disease Control, Atlanta, GA.
58. Paterson, Robert W., Kevin J. Boyle, Christopher F. Parmeter, James E. Neuman and Paul De Civita. 2008. "Heterogeneity in Preferences for Smoking Cessation." Virginia Bioinformatics Institute, Virginia Tech.
59. Boyle, Kevin J. 2006. "Economics of Emerging Diseases." Keynote Presentation, *Bangladesh Society of Microbiologists 22nd Annual Conference*. Dhaka, Bangladesh.

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60. Boyle, Kevin J. 2006. "The Economist as the Voice of Biological and Physical Systems in Natural Resource Damage Assessments." Invited Lecture, Department of Economics and Department of Costal and Marine Studies, East Carolina University.
 61. Taylor, Laura O., Mark M. Morrison, and Kevin J. Boyle. 2006. "Provision Rules and the Incentive Compatibility of Choice Surveys." Invited Lecture, Department of Economics, East Carolina University.
 62. Boyle, Kevin J., Sonia Aziz, and V. Kerry Smith. 2006. "Meta-analysis of Response Rates to Contingent-Valuation Studies Conducted by Mail." Keynote Presentation. Resources for the Future, Washington, DC. *Implications for Administering and Testing Representativeness Workshop*.
 63. Boyle, Kevin J. 2006. "Negotiation Talking Points: Seeking Your First Academic Position." Invited Lecture, *Transforming the Professoriate: Preparing Women for careers in Science and Engineering*, Advance Virginia Tech.
 64. Taylor, Laura O., Mark M. Morrison, and Kevin J. Boyle. 2006. "Provision Rules and the Incentive Compatibility of Choice Surveys." Invited Presentation, *Third World Congress of Environmental and Resource Economists*. Kyoto, Japan.
 65. Boyle, Kevin J. 2006. "Economic Benefit Estimation of Health Outcomes." Invited Presentation, International Center for Diarrheal Research. Dhaka, Bangladesh.
 66. Taylor, Laura O., Mark M. Morrison, and Kevin J. Boyle. 2006. "Provision Rules and the Incentive Compatibility of Choice Surveys." Invited Lecture, School of Marine Resources and Department of Food and Resource Economics, University of Delaware.
 67. Boyle, Kevin J. and Kathleen P. Bell. 2006. "Economic Valuation of Avoiding Exposure to Arsenic in Drinking Water." Invited Presentation, U.S. EPA NCER/NCEE Workshop, *Morbidity and Mortality: How Do We Value Risk of Illness and Death*.
 68. Boyle, Kevin J. 2006. "Chaos or Organized Confusion: Structural Models, Policy Relevance and Validity in Nonmarket Valuation." Keynote lecture, *Frontiers in Natural Resource Economics: A Symposium Honoring the Career of Richard C. Bishop*, University of Wisconsin.
 69. Boyle, Kevin J. 2005. "Economic Modeling of Natural Resource Damages." Invited presentation, Natural Resource Damages Litigation, Law Seminars International, Newark, New Jersey.
 70. Holmes, Thomas P. and Kevin J. Boyle. 2003. "Dynamic Bid Anchoring in Sequential, Attribute-Based Contingent Valuation." Selected paper, European Association of Environmental and Resource Economists, Twelfth Annual Conference, Bilbao, Spain.
 71. Boyle, Kevin J., Mark M. Morrison, and Laura O. Taylor. 2003. "Provision Rules and the Incentive Compatibility of Conjoint Surveys." Selected paper, European Association of Environmental and Resource Economists, Twelfth Annual Conference, Bilbao, Spain.
 72. Teisl, Mario F., Kevin J. Boyle, Richard Record, and Rob Southwick. 2001. "Optimizing License Revenues." CMBA conference, New Orleans, Aug. 28th.

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73. Teisl, Mario F., Brian Roe, Kevin Boyle, T. Lynn Riggs, Mark L. Messonnier, Melissa J. Herrmann. 2001. "Understanding how respondents view food safety risks: Implications to the design of willingness-to-pay experiments." Annual Workshop, Association of Environmental and Resource Economists, Bar Harbor, ME.
 74. Boyle, Kevin J., and Tommy Hsu. 2001. "Effect of Aquatic Weeds on Lakefront Property Values." Maine Water Conference. Augusta, Maine.
 75. Boyle, Kevin J. 2001. "Stated Preference Estimation of Hicksian Surplus Using Conjoint Analysis." Department of Economics. University of Colorado, Boulder, CO.
 76. Boyle, Kevin J. 2001. "Including Regulations and Angler Characteristics in RUM Models: Preliminary Thoughts and Estimates." Benefit Transfer workshop, North Carolina.
 77. Boyle, Kevin J. 2001. "Meta Analysis of Sport Fishing Values." Benefit Transfer workshop, North Carolina.
 78. Boyle, Kevin J. 2001. "A Comparison of Rank and Choice Data in Eliciting Stated Preferences: An Application to the Maquarie Marshes, NSW, AU," Department of Economics, University of Central, Orlando, Florida.
 79. Boyle, Kevin J. 2001. "Stated Preference Estimation of Hicksian Surplus Using Conjoint Analysis." Department of Economics. University of New Hampshire, Durham, New Hampshire.
 80. Paterson, Robert, and Kevin J. Boyle. 2001. "Out of Sight, Out of Mind? Using GIS to Incorporate Topography in Hedonic Property Value Models." Northeastern Agricultural and Resource Economics Association annual meetings, Bar Harbor, Maine.
 81. Scrogin, David, Kevin J. Boyle, Andrew Plantinga, and George Parsons. 2001. "Regulated Recreationists: Case and Angler Catch, Harvest and Destination Choice." Northeastern Agricultural and Resource Economics Association annual meetings, Bar Harbor, Maine.
 82. Paterson, Robert, Kevin J. Boyle, Mary Ahearn, Anna Alberini, John Bergstrom, Larry Libby, and Michael P. Welsh. 2001. "Attributes of Farmland in the Provision of Open Space: It is Not a Black and White Issue." Northeastern Agricultural and Resource Economics Association annual meetings, Bar Harbor, Maine.
 83. Boyle, Kevin J. 2001. "Stated Preference Estimation of Hicksian Surplus Using Conjoint Analysis." University of New Hampshire, Durham, NH.
 84. Boyle, Kevin J., and Thomas P. Holmes. 2001. "Anchoring in Conjoint Choice Experiments." Selected paper, European Association of Environmental and Resource Economists, Eleventh Annual Conference, South Hampton, England.
 85. Poor, P. Joan, and Kevin J. Boyle. 2000. "The Value of Publicly protected National Wildlife Refuges, Using a Hedonic property-Value Model." Annual meeting of the American Agricultural Economics Association, Tampa, Florida.

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86. Alberini, Anna, Kevin J. Boyle, and Michael P. Welsh. 2000. "Analysis of Contingent Valuation Data with Multiple Bids and Response Options Allowing Respondents to Express Uncertainty." Selected paper, European Association of Environmental and Resource Economists, Tenth Annual Conference, Crete, Greece.
 87. Poe, Gregory L., Kevin J. Boyle, and John C. Bergstrom. 2000. "A Meta Analysis of Contingent Values for Groundwater Quality in the United States." Selected paper, European Association of Environmental and Resource Economists, Tenth Annual Conference, Crete, Greece.
 88. Poor, P. Joan, and Kevin J. Boyle. 2000. "A Hedonic Property-Value Model of the Value of Open Space Provided by the Great Meadows National Wildlife Refuge." Northeastern Agricultural and Resource Economics Association annual meeting, Rhode Island.
 89. Boyle, Kevin J., and Laura O. Taylor. 2000. "Estimating the Demand for Lake Water Quality with a Hedonic Property-Value Model: Objective versus Subjective Measures of Quality." Department of Economics, University of New Mexico.
 90. Boyle, Kevin J. 2000. "New Frontiers in Environmental Policy in the United States." Department of Environmental Protection, New South Wales, Australia.
 91. Boyle, Kevin J., and Laura O. Taylor. 2000. "Estimating the Demand for Lake Water Quality with a Hedonic Property-Value Model: Objective versus Subjective Measures of Quality." Department of Environmental Protection, New South Wales, Australia.
 92. Boyle, Kevin J., Thomas P. Holmes, Mario F. Teisl, and Brian Roe. 2000. "Assessing Public Preferences for Timber Harvesting Using Conjoint Analysis: A Comparison of Response Formats." Charles Stuart University, Bathurst, Australia.
 93. Boyle, Kevin J., Daniel Hellerstein, Richard C. Bishop, Michael P. Welsh, Mary Ahearn, Andrew Laughland, and John Charbonneau. 2000. "Tests of Scope in Contingent-Valuation Studies: Are the Numbers for the Birds?" Australian National University and the Australian Agricultural Economics Association, Canberra, Australia.
 94. Poor, P. Joan, Kevin J. Boyle, and Laura Taylor. 2000. "Objective Verses Subjective Measures of Environmental Quality in Hedonic Property-Value Models." Annual meeting of Regional Project W-133, Benefits and Costs Transfer in Natural Resources Planning, Kauai, Hawaii.
 95. Boyle, Kevin J., Thomas P. Holmes, Mario F. Teisl, and Brian Roe. 2000. "Assessing Public Preferences for Timber Harvesting Using Conjoint Analysis: A Comparison of Response Formats." Department of Agricultural and Resource Economics, Colorado State University, Fort Collins, CO.
 96. Boyle, Kevin J., Daniel Hellerstein, Richard C. Bishop, Michael P. Welsh, Mary Ahearn, Andrew Laughland, and John Charbonneau. 2000. "Tests of Scope in Contingent-Valuation Studies: Are the Numbers for the Birds?" Selected paper, Association of Environmental and Resource Economists' session on "Advances in Valuation Methods," Allied Social Science Meetings, Boston, MA.

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97. Alberini, Anna, Kevin J. Boyle, and Michael P. Welsh. 1999. "Analysis of Non-Market Valuation Data with Multiple Bids and Response Options that Allow Respondents to Indicate They Are Uncertain." Department of Agricultural and Resource Economics, Colorado State University, Fort Collins, CO.
 98. Boyle, Kevin J. 1999. "Estimating the Demand for Lake Water Quality with a Hedonic, Property-Value Model: Objective versus Subjective Measures of Quality." Department of Economics, University of Wyoming, Laramie, Wyoming.
 99. Taylor, Laura O., Kevin J. Boyle, and P. Joan Poor. 1999. "Subjective versus Objective Quality Measures in Hedonic Demand Models: Implication for Valuing Water Quality." Selected paper, annual meeting of the Southern Economic Association, New Orleans, LA.
 100. Holmes, Thomas P., and Kevin J. Boyle. 1999. "Response Bias in Conjoint Analysis." Selected paper, annual meeting of the Southern Economic Association, New Orleans, LA.
 101. Taylor, Laura O., Kevin J. Boyle, and P. Joan Poor. 1999. "Subjective versus Objective Quality Measures in Hedonic Demand Models: Implication for Valuing Water Quality." 7th Annual Triangle Camp Resources, Wilmington, NC.
 102. Boyle, Kevin J., P. Joan Poor, and Laura O. Taylor. 1999. "Estimating the Demand for Protecting Freshwater Lakes from Eutrophication." Invited paper, Association of Environmental and Resource Economics session on "Frontiers of Applications of Hedonics to Environmental Issues," annual meeting of the American Agricultural Economics Association. Nashville, TN.
 103. Poor, P. Joan, Kevin J. Boyle, and Laura O. Taylor. 1999. "Objective versus Subjective Measures of Environmental Quality in Hedonic Property Value Models." Selected paper, annual meeting of the Northeastern Agricultural and Resource Economics Association, Morgantown, WV.
 104. Boyle, Kevin J., Roy Bouchard, and Jennifer Schuetz. 1999. "Economic Values and Economic Impacts of Nonresidential Users of Maine's Lakes." 12th Annual National Conference Enhancing the States' Lake Management Programs, Chicago, Illinois.
 105. Boyle, Kevin J. 1999. "The Effect of Lake Water Clarity on Recreational Uses of Maine's Lakes." Annual New England Lakes Conference "Promoting Awareness & Action for our Lakes' Future," Auburn, Maine.
 106. Boyle, Kevin J., Thomas P. Holmes, Mario F. Teisl, and Brian Roe. 1999. "Assessing Public Preferences for Timber Harvesting Using Conjoint Analysis: A Comparison of Response Formats." Department of Agricultural and Resource Economics, University of Georgia.
 107. Boyle, Kevin J., Richard C. Bishop, Daniel Hellerstein, Michael P. Welsh, Mary C. Ahearn, Andrew Laughland, John Charbonneau, Raymond O'Connor, and Anna Alberini. 1999. "Tests of Scope in Contingent-Valuation Studies: Are the Numbers for the Birds?" Department of Economics, Georgia State University, Atlanta, GA.
 108. Boyle, Kevin. 1998. "Experimental Designs Affect Preference Measures." National Science Foundation Workshop on Alternatives to Traditional Contingent Valuation Techniques, Nashville, TN.

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109. Boyle, Kevin J. 1998. "Valuation of Ecosystems and Biological Diversity." The Nature Conservancy, International Leadership Council, Emerging Issues Forum, Charleston, SC.
 110. Yabe, Mitsuyasu, John C. Bergstrom, and Kevin J. Boyle. 1998. "Political Meaning of Contingent Valuation Estimates: Comparison of Economic Value Between Tax Reallocation and Special Tax." Annual meeting of the Society for Environmental Economics and Policy Studies, Tokyo, Japan.
 111. Boyle, Kevin J., Richard C. Bishop, Daniel Hellerstein, Michael P. Welsh, Mary C. Ahearn, Andrew Laughland, John Charbonneau, and Raymond O'Connor. 1998. "Tests of Scope in Contingent-Valuation Studies: Are the Numbers for the Birds?" World Congress of Environmental and Resource Economists, Venice, Italy.
 112. Boyle, Kevin J., Thomas P. Holmes, Mario F. Teisl, Brian Roe, Shelley Phillips, and Genevieve Pullis. 1998. "Assessing Public Preferences for Timber Harvesting Using Conjoint Analysis: A Comparison of Response Formats." World congress of Environmental Economists, Venice, Italy.
 113. Boyle, Kevin J., Thomas P. Holmes, Mario F. Teisl, Brian Roe, Shelley Phillips, and Genevieve Pullis. 1998. "Assessing Public Preferences for Timber Harvesting Using Conjoint Analysis." Annual meeting of the Northeastern Forest Economics Association, Fredericton, New Brunswick, Canada.
 114. Schuetz, Jennifer, and Kevin J. Boyle. 1998. "The Effects of Water Quality on Recreational Benefits of Maine's Great Ponds." Presented at Our New England Waters: Watershed Stewardship for the Next Millennium, Durham, New Hampshire. Hosted by the New Hampshire Lakes Lay Monitoring Program, New Hampshire Lakes Association and the New England Chapter of the North American Lake Management Society.
 115. Boyle, Kevin J. 1998. "Biodiversity, Valuation and Trade-Offs." Social Science Research Needs in Forestry: The Human Dimensions of Forest Management, Montreal, Canada. Sponsored by the Canadian Forest Service.
 116. Boyle, Kevin J., and Steven R. Lawson. 1998. "Hedonic Demand for Lake Water Clarity." Annual meeting of Regional Project W-133, Benefits and Costs Transfer in Natural Resources Planning, Colorado Springs, CO.
 117. Boyle, Kevin J., and Steven R. Lawson. 1998. "Hedonic Demand for Lake Water Clarity." Invited Alumni Lecture, Department of Agricultural Economics, University of Wisconsin.
 118. Boyle, Kevin J., Jennifer Schuetz, and Jeffrey S. Kahl. 1997. "Great Ponds Play an Integral Role in Maine's Economy." 17th International Symposium of the North American Lake Management Society, Houston, TX.
 119. Boyle, Kevin J. 1997. "Protecting Water Quality Makes Sense for Maine Businesses." Keynote address, Maine Water Conference, Augusta, ME. Hosted by the Water Research Institute, University of Maine.
 120. Bergstrom, John C., Kevin J. Boyle, and M. Yabe. 1997. "Comparison of Economic Value for Protecting Ground Water Quality in Maine and Georgia Using Tax Reallocation and

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- Special Tax Payment Vehicles”. Annual meeting of Regional Project W-133, Benefits and Costs Transfer in Natural Resources Planning.
121. Alberini, Anna, Kevin J. Boyle, and M.P. Welsh. 1997. “Using Multiple-Bounded Questions to Incorporate Preference Uncertainty in Non-Market Valuation”. Annual meeting of Regional Project W-133, Benefits and Costs Transfer in Natural Resources Planning.
 122. Boyle, Kevin J., Margaret Schneemann, V.K. Smith, and Donald Epp. 1997. “Meta Analysis of Response Rates to Contingent-Valuation Studies Conducted by Mail”. Annual meeting of Regional Project W-133, Benefits and Costs Transfer in Natural Resources Planning.
 123. Boyle, Kevin J., Jennifer Schuetz, and J. Steve Kahl. 1997. “Great Ponds Plan an Integral Role in Maine's Economy. National Conference on Enhancing the States' Lake Management Programs”. U.S. Environmental Protection Agency and the Northeastern Illinois Planning Commission.
 124. Boyle, Kevin J., Jennifer Schuetz, and J. Steve Kahl. 1997. “Great Ponds Play an Integral Role in Maine's Economy. Maine Water Conference”. Augusta, ME. Hosted by the Water Research Institute, University of Maine.
 125. Boyle, Kevin J., Jennifer Schuetz, and J. Steve Kahl. 1997. “Great Ponds Play an Integral Role in Maine's Economy”. Our New England Waters Conference. Kingston, RI. Hosted by University of Rhode Island (URI) cooperative Extension Water Quality Programs; US EPA, New England Region; RI Department of Environmental Management; New England Chapter of the North American Lake Management Society; URI Department of Natural Resources.
 126. Boyle, Kevin J. 1996. “Valuing the Invaluable: Economic Values for Natural Resources.” Invited plenary presentation, International Conference on Integrated Management and Sustainable Development in Coastal Zones, Rimouski, Quebec, Canada.
 127. James, Holly L., Kevin J. Boyle, Roy Bouchard, and Steven Lawson. 1996. “The Relationship between Lake Water Quality and Property Values.” Invited presentation, Bridging the Gulf of Maine: A Watershed of Watersheds, sponsored by the Collaboration of Community Foundations for the Gulf of Maine, Portland, ME.
 128. James, Holly L., Kevin J. Boyle, Roy Bouchard, and Steven Lawson. 1996. “The Relationship Between Lake Water Quality and Property Values.” Invited presentation, New England Lake Conference, Ashland, MA.
 129. Boyle, Kevin J., Hugh F. MacDonald, Hsiang-tai Cheng, and Daniel W. McCollum. 1996. “Bid Design and Yea Saying in Single-Bounded, Dichotomous-Choice Questions.” Selected paper, annual meeting of the Northeastern Agricultural and Resource Economics Association, Atlantic City, N.J.
 130. Boyle, Kevin J. 1996. “Water Quality and Property Values.” Invited presentation, Maine Lakes Conference, Auburn, ME.
 131. Boyle, Kevin J., Hugh F. MacDonald, Hsiang-tai Cheng, and Daniel W. McCollum. 1996. “Bid Design and Yea Saying in Single-Bounded, Dichotomous-Choice Questions.” Selected paper, annual meeting of Regional Project W-133 (Benefits and Costs in Natural Resources Planning), Jekyll Island, GA.

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132. James, Holly L., Kevin J. Boyle, Roy Bouchard, and Steven Lawson. 1995. "The Relationship Between Lake Water Quality and Property Values." Invited presentation, Fish River Lakes Water Quality Association Annual Conference, Sinclair, ME.
 133. James, Holly L., Kevin J. Boyle, and Roy Bouchard. 1995. "The Relationship Between Lake Water Quality and Property Values." Invited paper, North American Lake Society Annual Symposium, Toronto, Canada.
 134. Boyle, Kevin J., Holly L. James, and Roy Bouchard. 1995. "The Economic Value of Maine's Great Ponds." Invited paper, Maine Coalition of Lake Associations, Maine Lake Conference, Colby College, Waterville, Maine.
 135. James, Holly L., Kevin J. Boyle, and Roy Bouchard. 1995. "A Hedonic Property Value Study of Water Quality in Maine's Lakes." Selected paper, annual meeting of the Northeastern Agricultural and Resource Economics Association.
 136. MacDonald, Hugh F., and Kevin J. Boyle. 1995. "Zero Bidders and Payment Vehicles in Dichotomous-Choice, Contingent-Valuation Studies: A Bivariate Probit Analysis." Selected paper annual meeting of the Northeastern Agricultural and Resource Economics Association.
 137. James, Holly L., Kevin J. Boyle, and Roy Bouchard. 1995. "Measuring the Economic Benefits to Property Owners of Lake Water Quality Protection." Selected paper, annual conference of The Universities Council on Water Resources.
 138. Boyle, Kevin J. 1995. "Substitution Between Natural Spawning and Hatchery Stocking in the Value of Atlantic Salmon Fishing: Implications for Restoration Efforts." Invited paper, 22nd Annual Conference of the Water Resources Planning and Management Division, American Society of Civil Engineers.
 139. Bergstrom, John C., and Kevin J. Boyle. 1995. "How Do People Perceive Ground Water Resources and Problems? Recent Focus Group Results." Presentation, annual meeting of Regional Project W-133 (Benefits and Costs in Natural Resources Planning).
 140. Boyle, Kevin J., Gregory Poe, and John C. Bergstrom. 1995. "What We Know About Ground Water Valuation: Results and Implications from Contingent-Valuation Studies." Selected paper, annual meeting of Regional Project W-133 (Benefits and Costs in Natural Resources Planning).
 141. James, Holly L., Kevin J. Boyle, and Roy Bouchard. 1995. "The Effect of Lake Water Quality on Property Values." Keynote address, A National Conference on Enhancing the States' Lake Management Programs, U.S. Environmental Protection Agency and the Northeastern Illinois Planning Commission.
 142. Teisl, Mario F., Kevin J. Boyle, and Brian Roe. 1994. "Conflicts Between Atlantic Salmon Restoration and Recreational Angling." Invited paper, 1994 meeting of the American Fisheries Society.
 143. Boyle, Kevin J., Gregory Poe, and John C. Bergstrom. 1994. "What We Know About Ground Water Valuation: Results and Implications from Contingent-Valuation Studies." Invited paper, joint meetings of the Association of Environmental and Resource Economists and the American Agricultural Economics Association.

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144. Roe, Brian, Kevin J. Boyle, and Mario F. Teisl. 1994. "Deriving Compensating Variation from Conjoint Data Sets: A Theoretical Model and Empirical Issues." Submitted paper, annual meeting of the American Agricultural Economics Association.
 145. Boyle, Kevin J. 1994. "The Practical Implications of Accomplishing an Ideal Benefits Transfer with Limited Data Availability." Invited paper, Workshop on Valuation of Environmental Damages, Bialowieza, Poland.
 146. Boyle, Kevin J., V. Kerry Smith, and Donald Epp. 1994. "Do Contingent-Valuation Survey Response Rates Have a Story to Tell?" Selected paper, annual meeting of Regional Project W-133. (Benefits and Costs Transfer in Natural Resources Planning.)
 147. Boyle, Kevin J., F. Reed Johnson, Daniel W. McCollum, William H. Desvousges, Richard W. Dunford, and Sara P. Hudson. 1993. "Valuing Public Goods: Discrete Versus Continuous Contingent-Valuation Responses." Invited seminar, Department of Agricultural Economics, Colorado State University.
 148. Bergstrom, John C., and Kevin J. Boyle. 1993. "Benefit Transfer Case Study: Benefits of Groundwater Protection in Dougherty County, Georgia." Invited paper, annual meetings of the American Agricultural Economics Association July.
 149. Boyle, Kevin J. et al. "Valuing Public Goods: Discrete versus Continuous Contingent-Valuation Responses." Selected paper, annual meetings of the American Agricultural Economics Association, July 1993.
 150. Teisl, Mario, Kevin J. Boyle, Daniel W. McCollum, and Stephen D. Reiling. "Reliability of Dichotomous Choice Contingent Valuation: An Application of Full Panel Design." Selected paper, annual meeting of the Northeastern Agricultural and Resource Economics Association, June 1993.
 151. Boyle, Kevin J., and Alan G. Clark. "The Economic Value of Moose Hunting: Does Getting a Bull Significantly Increase Value?" Selected paper, 29th North American Moose Conference, May 1993.
 152. Boyle, Kevin J. "Review of Contingent-Valuation Studies of Groundwater Protection." Invited presentation, U.S. Environmental Protection Agency's Science Advisory Board, Environmental Economics Advisory Committee, April 1993.
 153. Boyle, Kevin J. "Are Economic Values Sensitive to Changes in Environmental Conditions?" Invited seminar, University of Quebec at Rimouski, April 1993.
 154. Boyle, Kevin J. et al. "Valuing Public Goods: Discrete versus Continuous Contingent-Valuation Responses." Selected paper, annual meeting of Regional Project W-133 (Benefits and Costs in Natural Resources Planning), March 1993.
 155. Boyle, Kevin J. "Freshwater Fish Consumption and Dioxin Rule Making for Maine Rivers." Seminar, Resource and Environmental Economics Program, Department of Economics, North Carolina State University, October 1992.
 156. Boyle, Kevin J. 1992. "Economic Research of Fish and Wildlife Resources." Invited paper, Maine Agricultural and Forest Experiment Station Research Conference, University of Maine.

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157. Boyle, Kevin J. "Total Valuation of Complex Ecosystems." Keynote address, Scandinavian Society of Forest Economics Workshop on "Valuing Biodiversity." Helsinki, Finland. October 1992.
 158. Boyle, Kevin J. "Benefits and Costs of Atlantic Salmon Restoration." Keynote address, Scandinavian Society of Forest Economics Workshop on "Valuing Biodiversity." Helsinki, Finland. October 1992.
 159. Boyle, Kevin J. "Natural Resource Damage Assessments and The Cambridge Economics Symposium on Nonuse Values." Invited seminar, joint with Alan Randall of Ohio State University, Stockholm School of Economics, Stockholm, Sweden. October 1992.
 160. Johnson, F. Reed, William H. Desvousges, Richard W. Dunford, Kevin J. Boyle, and Sara P. Hudson. "The Validity of Expressed Nonuse Values for Environmental Commodities." Invited paper, annual meeting of the American Agricultural Economics Association and the Association of Environmental and Resource Economists, August 1992.
 161. Bergstrom, John C., and Kevin J. Boyle. "Benefit Transfer Case Study: Benefits of Groundwater Protection in Dougherty County, Georgia." AERE workshop on Benefit Transfer: Procedures, Problems and Research Needs, June 1992.
 162. Desvousges, William H., F. Reed Johnson, Richard W. Dunford, Kevin J. Boyle, Sara P. Hudson, and K. Nicole Wilson. "Measuring Natural Resource Damages with Contingent Valuation: Tests of Validity and Reliability." Cambridge Economics Symposium on Contingent Valuation: A Critical Assessment, April 1992.
 163. Boyle, Kevin J., Daniel McCollum, and Mario F. Teisl. 1992. "The Sign and Size of Option Value." Invited seminar, Resource and Environmental Economics Program, Department of Economics, North Carolina State University, March 1992.
 164. Boyle, Kevin J., Daniel McCollum, and Mario F. Teisl. 1992. "Empirical Evidence on the Sign and Size of Option Value." Invited paper, Thirty-First Annual Meeting of the Western Regional Science Association, February 1992.
 165. Boyle, Kevin J., and Marcia L. Phillips. "Contingent Valuation of Endangered Species: How Should Valuation Estimates be Interpreted?" Invited seminar, Department of Resource Economics, University of Rhode Island, November 1991.
 166. Boyle, Kevin J., Mario F. Teisl, and Stephen D. Reiling. "Managing Maine's Atlantic Salmon Resource: Qualitative and Economic Evaluations of Atlantic Salmon Fishing on the Penobscot River." Selected paper, Northeast Fish and Wildlife Conference, May 1991.
 167. Teisl, Mario F., Kevin J. Boyle, Stephen D. Reiling, and Owen Fenderson. "Angler Opinions Regarding the Allocation of Harvest Between Open Water Fishing and Ice Fishing." Selected paper, Northeast Fish and Wildlife Conference, May 1991.
 168. Boyle, Kevin J., Daniel W. McCollum, Mario F. Teisl, and Stephen D. Reiling. "Test-Retest Reliability of Contingent Values Using a Complete, Experimental Panel Design." Selected paper, annual meeting of Regional Project W-133 (Benefits and Costs in Natural Resources Planning), February 1991.

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169. Boyle, Kevin J., and Stephen D. Reiling. 1989. "Economic Benefits of Fishing, Hunting, and Wildlife-Associated Recreation." Invited seminar, Rocky Mountain Range and Forest Experiment Station, U.S. Forest Service, Fort Collins, CO.
170. Reiling, Stephen D., Kevin J. Boyle, Hsiang-Tai Cheng, and Marcia L. Phillips. "Contingent Valuation of a Public Program to Control Black Flies." Selected paper, annual meeting of the Northeastern Agricultural and Resource Economics Association, June 1989.
171. Boyle, Kevin J., Marcia L. Phillips, and Stephen D. Reiling. "Comprehensive Evaluation of a State's Fishing and Hunting Resources: A Case Study of Maine." Invited paper, annual meeting of the Western Forest Economists Association, May 1989.
172. Boyle, Kevin J. "The Role of Property Rights in Creating Economic Incentives for Wildlife Management on Private Timberland." Invited paper, joint meeting of the New England Society of American Foresters, Maine Chapter of the Wildlife Society, and Atlantic International Chapter of the American Fisheries Society, March 1989.
173. Bishop, Richard C., Curtis Brown, Michael P. Welsh, and Kevin J. Boyle. "Grand Canyon Recreation and Glen Canyon Dam Operations: An Economic Evaluation." Invited paper, Twenty-Eighth Annual Meeting of the Western Regional Science Association, February 1989.
174. Boyle, Kevin J., Stephen D. Reiling, and Marcia L. Phillips. "Prices of Substitutes: Implicit vs. Explicit Assumptions in Contingent-Valuation Questions." Invited paper, annual meeting of Regional Project W-133, February 1989.
175. Boyle, Kevin J. "Commodity Specification and the Framing of Contingent-Valuation Questions." Selected paper, annual meeting of the Northeastern Agricultural and Resource Economics Association, June 1988.
176. Bishop, Richard C., Scott R. Milliman, Barry L. Johnson, and Kevin J. Boyle. "Economic Evaluation of Fishery Rehabilitation Projects: Theoretical Principles and a Case Study." Invited paper, The Second Symposium on Social Science in Resource Management, June 1988.
177. Boyle, Kevin J., Michael P. Welsh, Richard C. Bishop, and Robert M. Baumgartner. "Contingent Valuation of Unexperienced Environmental Conditions." Invited paper, annual meeting of Regional Project W-133, January 1988.
178. Boyle, Kevin J. 1987. "Economic Valuation of Endangered Species of Wildlife." Invited seminar, Unity College, Unity, ME.
179. Boyle, Kevin J. 1987. "Welfare Measurements Using Contingent Valuation: A Comparison of Techniques." Invited presentation, Department of Agricultural Economics, Stillwater, OK.
180. Boyle, Kevin J., Michael P. Welsh, Richard C. Bishop, and Robert M. Baumgartner. "Analyzing the Effects of Glen Canyon Dam Releases on Colorado River Recreation Using Scenarios of Unexperienced Flow Conditions." Selected paper, annual meeting of the American Agricultural Economics Association, August 1987.
181. Boyle, Kevin J., and Richard C. Bishop. "The Economic Value of Endangered Species of Wildlife." Selected paper, 51st North American Wildlife and Natural Resources Conferences, March 1986.

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182. Bishop, Richard C., Kevin J. Boyle, and Michael P. Welsh. "Toward Total Valuation of Great Lakes Fishery Resources." Invited paper, Symposium on Social Assessment of Fishery Resources, September 1985. Conference sponsored by the Great Lakes Fishery Commission.
 183. Boyle, Kevin J., and Richard C. Bishop. "The Total Value of Wildlife: A Case Study Involving Endangered Species." Selected paper, annual meeting of the American Agricultural Economics Association, August 1985.
 184. Boyle, Kevin J., and Richard C. Bishop. "The Total Value of Wildlife Resources: Conceptual and Empirical Issues." Invited paper, Association of Environmental and Resource Economists Workshop on Recreational Demand Modeling, May 1985.
 185. Boyle, Kevin J., Richard C. Bishop, and Michael P. Welsh. "Testing for Starting Point Bias in the Iterative Bidding Format of Contingent Valuation Studies." Selected paper, annual meeting of the American Agricultural Economics Association, August 1984.
 186. Obermiller, Frederick W., and Kevin J. Boyle. "The Local Economic Effects of Wilderness Area Additions: Distributive Equity Implications." Discussion paper presented at the 1981 Western Forest Economists Meeting, May 1981.
 187. Boyle, Kevin J. "Subsidies to the New England Fishing Industry." In Harold J. Kyte and Wayne H. Meserve, "The Impact of Subsidies on Canadian-American Fisheries: An Obstacle to Joint Management." A paper presented at the Conference on Canadian-American Relations, April 1976.

TEACHING ACTIVITIES:

Careers in Real Estate, REAL 2014 (Fall 2014, Spring 2013/14/15)

Professional Development in Real Estate, REAL 3014 (Fall 2013/14)

Real Estate Data Analysis, REAL 2984 (Spring 2015)

Real Estate Financial and Market Analysis, Real 4984 (Winter 2015)

Advanced Environmental Economics, REP 471. (Spring 1987/88, Fall 01/02/03)

Senior Seminar, REP 489. (Spring 03)

Research Methods in Agricultural and Resource Economics, ARE 517. (Fall 1987/88/89/90/94/95/96/97/98)

Advanced Resource Economics, ARE 571. (Fall 1987/88/89/90/91/94/96/97/98, Spring 01/03/05)

Sophomore Seminar in Natural Resources, NRC 200. (Fall 1990/91/93)

Junior Seminar in Natural Resources, NRC 300. (Fall 1994/95/96)

Critical Issues in Natural Resources, NRC 489. (Fall 97/98/00)

Mathematical Economics Short Course. (Fall 1989)

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GRADUATE STUDENTS:**A. Post-doctoral:**

Scrogin, David O. Project: Random utility modeling of sport fishing with varying regulations. 1999-00. Current position: Associate Professor, Department of Economics, University of Central Florida.

Poor, P. Joan. Project: Hedonic modeling of the effects of National Wildlife Refuges on property prices in urban and rural areas. 1998-00. Current position: Provost and Vice President for Academic Affairs, Truman State University.

Roach, Brian. Project: Issues in the management of nongame wildlife. 1996-98. Current position: Senior Research Associate, Global Development and Environment Institute, Tufts University.

B. PH.D.:

Yuan, Yuan. 2015. "Conditional, Structural and Unobserved Heterogeneity: three essays on preference heterogeneity in the design of financial incentives to increase weight loss program reach."

Li, Xiaoshu. 2014. "Stated and Revealed Preference Valuation of Forest Ecosystems." Postdoctoral Researcher, Department of Forestry, University of Kentucky.

Kaul, Sapna. 2013. "Exploring Alternative Methodologies for Robust Inferences: Applications in Environmental and Health Economics." (<http://vtechworks.lib.vt.edu/handle/10919/23925>) Assistant Professor of Health Economics, Department of Preventive Medicine and Community Health, University of Texas Medical Branch at Galveston.

Zhang, Congwen. 2012. "Essays on the Application and Estimation of Hedonic Models." (<http://vtechworks.lib.vt.edu/handle/10919/37788>)

Kleczyk, Ewa. 2008. "Incidence and Costs of Pinhole Leak Corrosion and Corporate Cost of Capital Borrowing." (<http://vtechworks.lib.vt.edu/handle/10919/29901>) Senior Director, Custom Analytics, ImpactRX.

Aziz, Sonia. 2006. "Valuation of Avoiding Arsenic in Drinking Water in Rural Bangladesh: An Averting Behavior Analysis." Associate Professor, Moravian College.

C. M.S.:

Delessio, Nicole M. 2015. "Segmentation of the market for labeled ornamental plants by environmental preferences: A latent class model. Current position: Analyst, Norfolk Southern.

Boatwright, Jessica. 2013. "Siting Community Wind Farms: An Investigation of NIMBY." (<http://vtechworks.lib.vt.edu/handle/10919/23750>) Current position: Cost Analyst, Technomics, Inc.

Heier, Elizabeth N. 2012. "The Amenity Value of Trees: A meta-analysis of Hedonic, Property-value Studies." Current position: Loan Administrator, Bank of America.

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- Hartter, David L. 2012. "Understanding Consumers' Ornamental Plant Preferences for Disease-free and Water Conservation Labels." Current position: Senior Sustainability Analyst, EarthShift.
- Fuller, Harry M. 2011. "Farmland Conservation Easement Valuation Using an Attribute-based Choice Survey: Comparing Preferences within the United States, Georgia, Ohio and Maine." Current position: Economist, U.S. Fish and Wildlife Service.
- Prasai, Nilam. 2008. "Testing Criterion Validity of Benefit Transfers Using Simulated Data." Research Analyst, International Food Policy Research Institute.
- Reed, Scott. 2006. "Perception and Preference in Random Utility Models: An Applied Analysis of Lake Water Quality and Site Choice."
- Ozdemir, Semra. 2003. "Convergent Validity of Conjoint Values for Farmland Conservation Easement Programs." Current position: Duke-NUS Graduate Medical School, Singapore. (The Norris Charles Clements Graduate Award for outstanding graduate student research, Maine Agricultural and Forest Experiment Station Research Council, 2003.)
- Sargent-Michaud, Jessica. 2002. "Arsenic in Drinking Water and Public Opinion on Wildlife Management as Case Studies of Natural Resource Policy." Current position: Senior Research Associate, The Trust for Public Land, Boston, MA
- Paterson, Robert. 2001. "Nonmarket Valuation and Land Use: Two Essays." Current position: Partner, Industrial Economics, Cambridge, MA
- Hsu, Tommy I. 2000. "A Hedonic Study of the Effects of Lake-Water Clarity and Aquatic Plants on Lakefront Property Prices in Vermont." Current position: Environmental Planner, California Department of Transportation, Los Angeles, CA.
- La Rouch, Genevieve Pullis. 1998. "Public Perceptions of Forest Ecosystem Attributes and Economic Values for Small, Private Woodlots With and Without Alternative Timber Harvesting." Current position: U.S. Fish and Wildlife Service, Washington, DC.
- Schuetz, Jennifer. 1998. "Economic Values and Impacts Associated with Access Users' Recreational Use of Maine's Great Ponds." Current position: Field Coordinator, Bosque School, Albuquerque, New Mexico.
- Harris, Brian. 1998. "Highlights from the 1996 Maine Ice Fishing Follow-Up Survey." (Nonthesis) First position: Analyst, University of Kansas.
- Phillips, Shelley. 1997. "Public Preferences for Timber Harvesting." (Nonthesis) First position: Manager, MBNA, Belfast, ME.
- Lawson, Steven R. 1997. "Estimating the Benefits of Water Quality in Maine's Lakes: A Hedonic Property Value Model." Current position: Director, Public Lands Planning and Management, RSG, Inc.
- Schneemann, Margaret. 1997. "A Meta-Analysis of Response Rates to Contingent Valuation Studies Conducted by Mail." Current position: Water Resource Economist, Illinois-Indiana Sea grant program.

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- James, Holly L. 1995. "A Hedonic Property Value Study of Water Quality in Maine Lakes."
Current position: Senior Economist, W.H Desvousges & Associates. (Dow-Griffie Award for the best graduate student research, Maine Agricultural and Forest Experiment Station, 1994. Thesis nominated for the NEARA Best Masters Thesis award.)
- Phillips, Marcia L. 1994. "Understanding Users' and Wildlife Managers Perceptions of Wildlife Management." Current position: Senior Recreation Resource Economist, Kleinschmidt Associates, Pittsfield, Maine. (Thesis nominated for the NEARA Best Masters Thesis award.)
- James E. Anderson. 1994. "Who Contributes to the Chickadee Checkoff?" First position: Policy Analyst, National Center for Food and Agricultural Policy, Washington, DC.
- Ramona ElHamzoui. 1993. "Black Bear Hunting in Maine: Do Hunter Characteristics Affect Opinions Regarding Hunting Regulations?" Current position: Program Officer, USAID. Morocco.
- Deanna Potter. 1991. "Benefit-Cost Analysis for Wildlife Reintroductions." Current position: Extension Educator, University of Maine Cooperative Extension, Fort Kent, ME.
- John V. Westra. 1991. "Net Revenue Maximizing Crop Rotations for Maine's Potato Farmers." Current position: Associate Professor, Louisiana State University. (Thesis nominated for the NEARA Best Masters Thesis award.)